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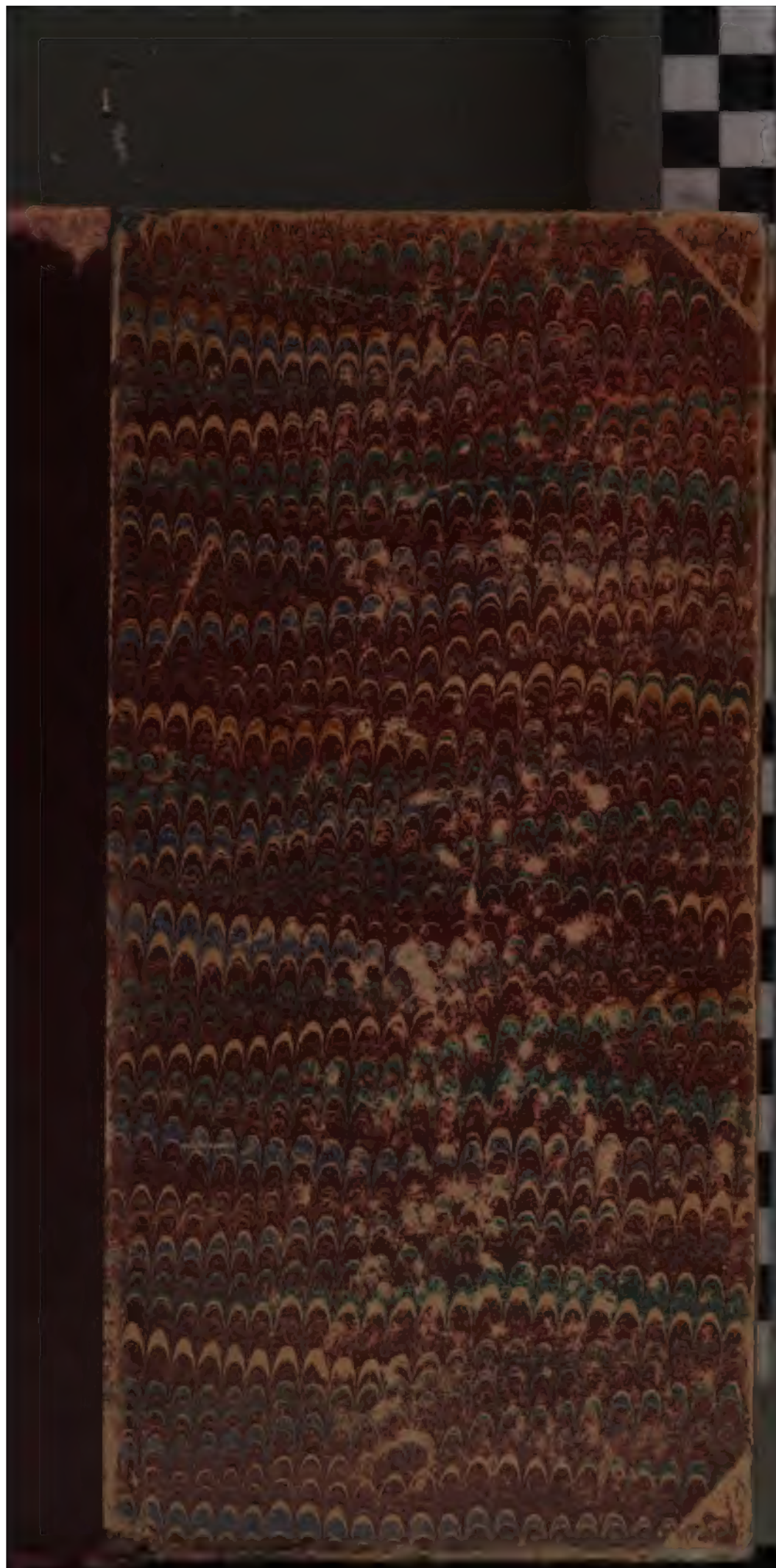
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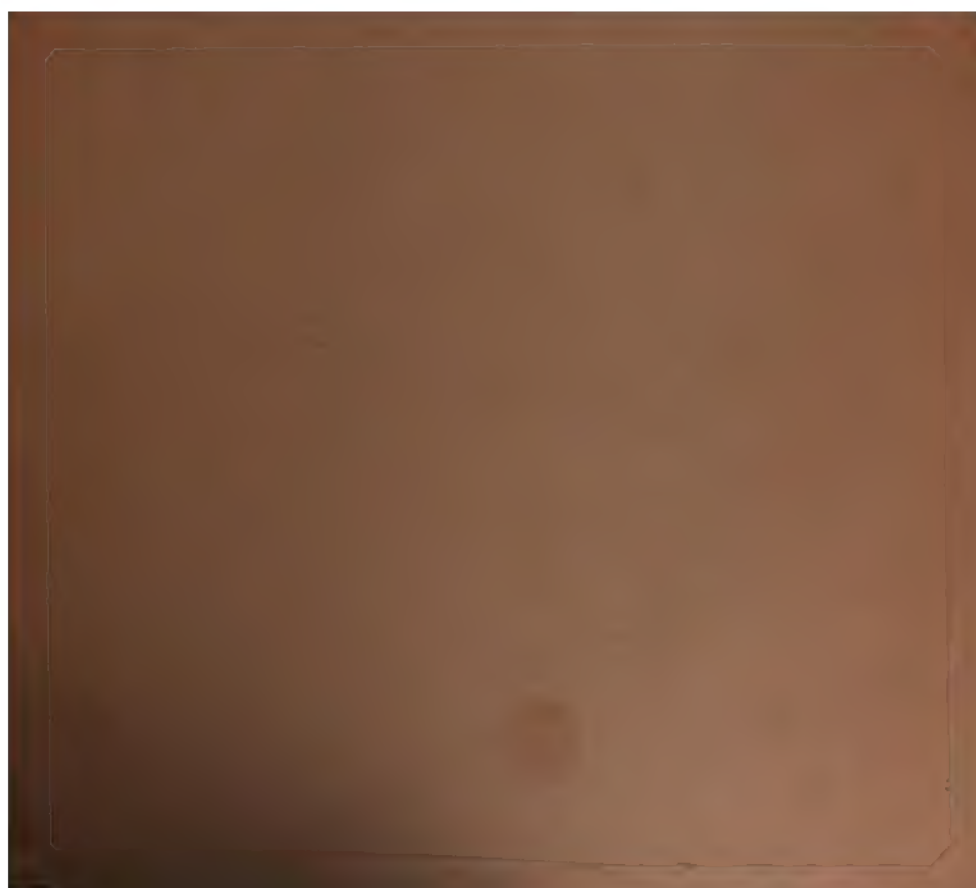
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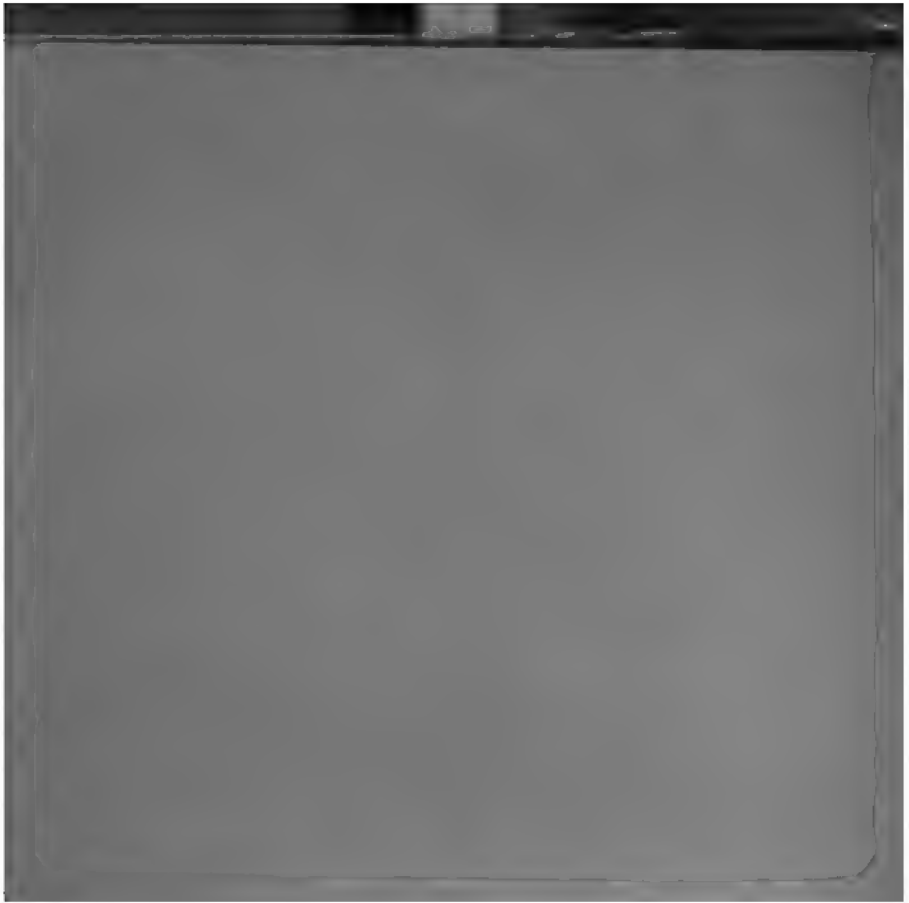


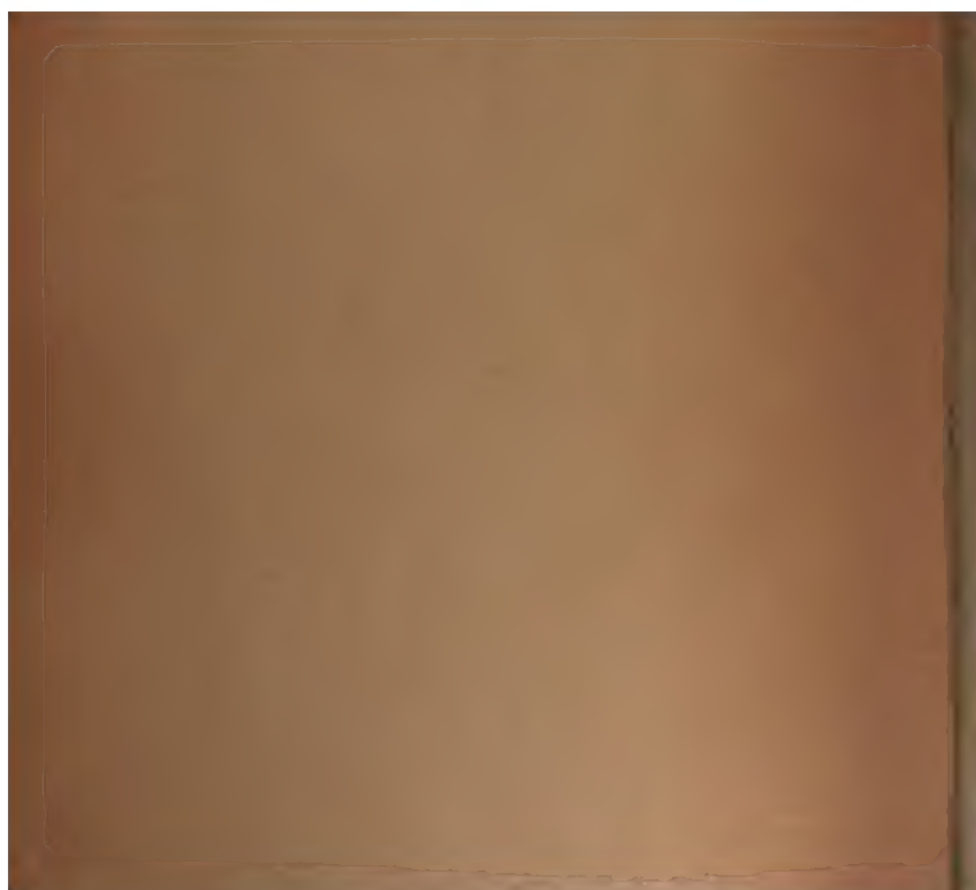
















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# BULLETIN

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No. 50.

THE BIRDS

OF

NORTH AND MIDDLE AMERICA.

BY

ROBERT RIDGWAY.

CREATOR, DIVISION OF BIRDS.

PART II.

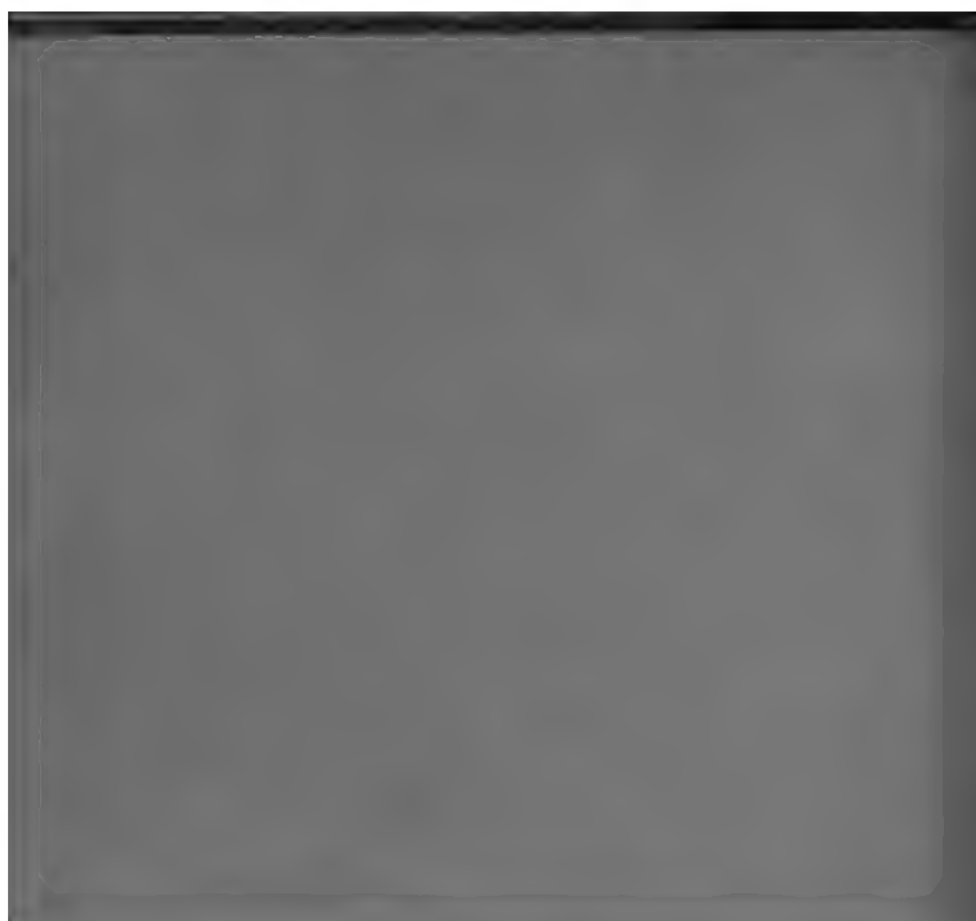


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**UNITED STATES NATIONAL MUSEUM.**

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**PART II.**



**WASHINGTON:**  
**GOVERNMENT PRINTING OFFICE.**  
**1902.**



# THE BIRDS

OF

NORTH AND MIDDLE AMERICA:

A DESCRIPTIVE CATALOGUE

OF THE

HIGHER GROUPS, GENERA, SPECIES, AND SUBSPECIES OF BIRDS  
KNOWN TO OCCUR IN NORTH AMERICA, FROM THE  
ARCTIC LANDS TO THE ISTHMUS OF PANAMA,  
THE WEST INDIES AND OTHER ISLANDS  
OF THE CARIBBEAN SEA, AND THE  
GALAPAGOS ARCHIPELAGO.

BY

ROBERT RIDGWAY,

CURATOR, DIVISION OF BIRDS.

---

## PART II.

Family TANAGRIDÆ—The Tanagers.

Family ICTERIDÆ—The Troupials.

Family CEREVIDÆ—The Honey Creepers.

Family MNIOTILTIDÆ—The Wood Warblers.

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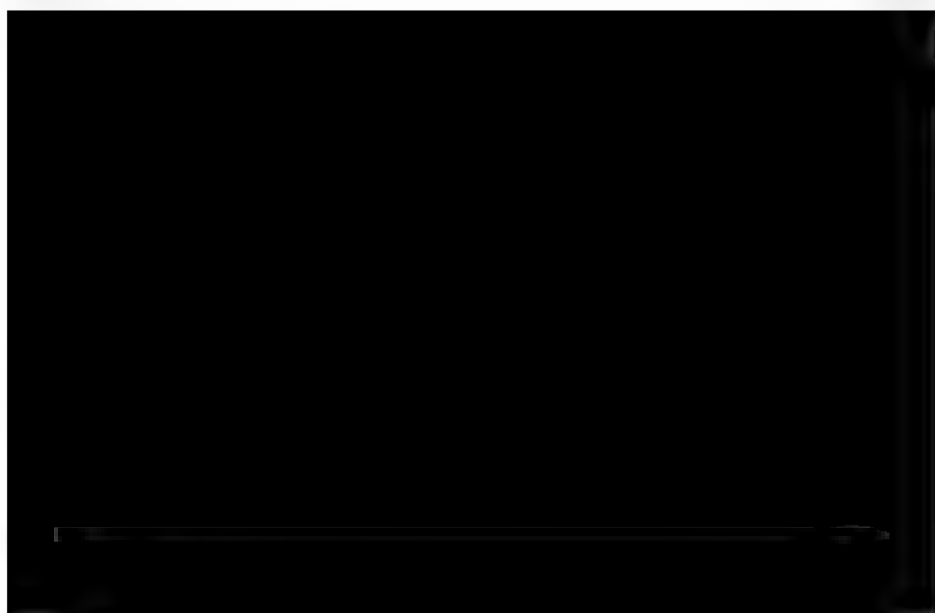
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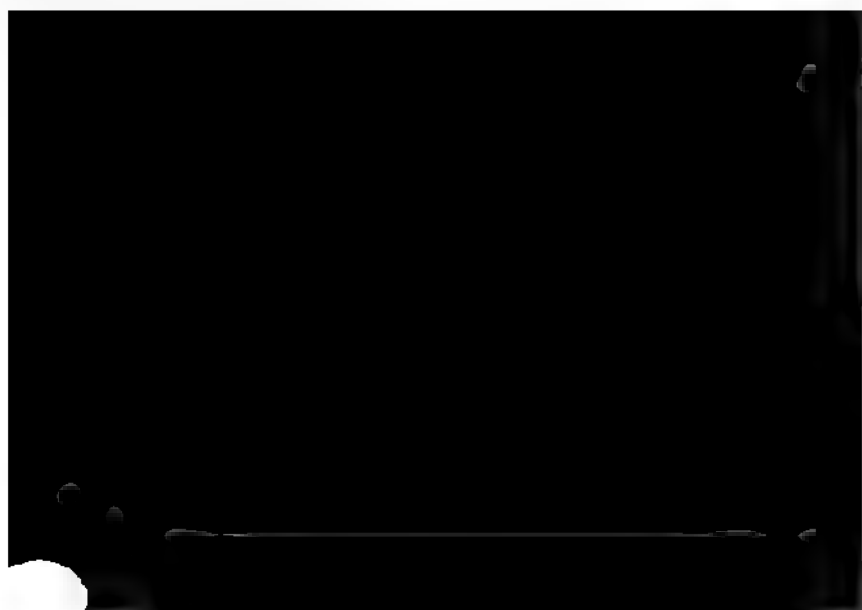
The present volume is the second of a series which will probably require eight volumes for completion. It contains the following families: Tanagridæ (Tanagers), Icteridæ (Troupials), Cœrebidæ (Honey Creepers), and Mniotiltidæ (Wood Warblers). Part I, issued in 1901, included the Family Fringillidæ (Finches) alone. Part III, which is well under way, will include the Motacillidæ (Wagtails and Pipits), Hirundinidæ (Swallows), Vireonidæ (Vireos), Ampelidæ (Waxwings), Ptiliogonatidæ (Silken Chatterers), Dulidæ (Palm Chatterers), Laniidæ (Shrikes), Corvidæ (Crows and Jays), Paridæ (Titmice), Sittidæ (Nuthatches), Certhiidæ (Creepers), Troglodytidæ (Wrens), Cinclidæ (Dippers), Chamæiidæ (Wren-tits), and Sylviidæ (Kinglets, etc.), and will probably go to press some time during the present year. The remaining volumes are all in a more or less advanced stage of preparation, and it is hoped that these may follow at the rate of two a year.

Acknowledgments for the loan of material for use in the preparation of the present volume are due to the persons and public institutions mentioned in Part I (pages xii, xiii), and also to Dr. A. K. Fisher, Mr. William Palmer, and Mr. Paul Bartsch, of Washington, District of Columbia. Both Dr. Fisher and Mr. Palmer should have been mentioned in Part I in this connection, and the inadvertent omission of their names is much regretted.

Most of the measurements of specimens for the present volume were made by Mr. J. H. Riley, Mr. Sidney S. Wilson, and Miss Frances E. Swett.

ROBERT RIDGWAY.

SEPTEMBER 6, 1902.



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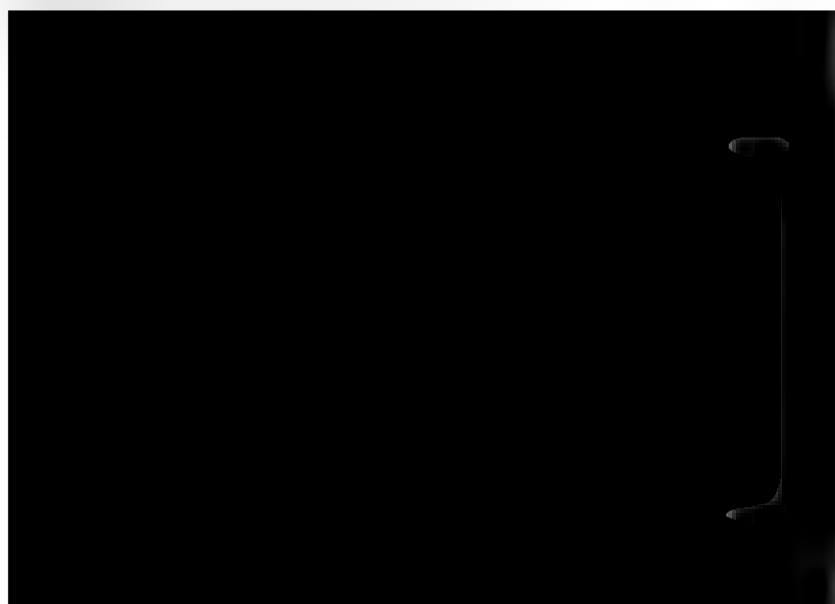
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# THE BIRDS

OF

## NORTH AND MIDDLE AMERICA.

---

By ROBERT RIDGWAY,  
*Curator, Division of Birds.*

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### Part II.

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#### Family TANAGRIDÆ.

##### THE TANAGERS.

Non-granivorous (frugivorous and insectivorous), conirostral, "nine-primaried," acutiplantar Oscines, with the commissure not abruptly angulated or deflexed basally, and with the mandibular tomium not distinctly angulated (never toothed) subbasally.

As stated under the head of family Fringillidæ, the division here made (like all preceding ones) between the Tanagers and the Finches is an arbitrary one. The Tanagridæ, as here restricted, are without much doubt a more or less artificial group, and I am very doubtful as to whether the fruit-eating *Euphoniæ* (genera *Euphonia*, *Pyrrhuphonia*, and *Chlorophonia*) should not be separated from the others as a distinct family. This question, however, can only be settled after the internal structure of all the genera has been carefully studied.

From the Tanagridæ as given by Dr. Sclater in his latest monograph of the group<sup>1</sup> I have already removed the genera *Pitylus* (including *Caryothraustes*, *Rhodothraupis*, and *Periporphyrus*) and *Saltator*, which are referred to the Fringillidæ. Another genus must also be removed. This is *Calyptophilus* Cory, usually placed next to *Phænicophilus*; but, being a "ten-primaried" bird, it obviously does not belong here.<sup>2</sup>

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<sup>1</sup>Catalogue | of the | Passeriformes, | or Perching Birds, | in the | Collection | of the | British Museum. | — | Fringilliformes: Part II | containing the Families | Cerebidæ, Tanagridæ, and Icteridæ. | By | Philip Lutley Sclater. | London: | Printed by order of the Tr. | 1886. |

<sup>2</sup>*Calyptophilus* is of very doubtful position, but probably is a member of the Mimidæ.

Other supposed Tanagridæ which it seems to me must be removed from this group are the more slender-billed species referred to the genus *Chlorospingus*, constituting numbers 16 to 32 of Dr. Sclater's "catalogue." These I would place in the family Mniotiltidæ under the generic name *Hemispingus* Cabanis. At the same time, I would add to the Tanagridæ a species hitherto placed in the Cœrebidæ, namely, "*Dacnis*" *pulcherrima*, the type of a new genus, *Iridophanes*.<sup>1</sup> To what further extent the limits of the Tanagridæ may require readjustment I have not at present any opinion to express.

The following "key" to the genera found from the Panama Railroad northward is mainly artificial and is chiefly based on Central American species.

KEY TO THE GENERA OF TANAGRIDÆ.

- a. Tail less than two-thirds as long as wing; bill short, triangular in vertical profile (width at base greater than distance from nostril to tip of maxilla), compressed terminally, the maxillary tomium distinctly dilated or convex basally or else gonys very conspicuously upcurved; plumage chiefly uniform bright green, or blue and green, above, without markings on back or wings or chestnut on head, or else silky, blended and metallic, dark steel blue, violet-black, metallic olive-green, or steel gray above, with or without light blue, yellow or rufous on head; stomach a membranous sac<sup>2</sup> (*Euphonia*.)
  - b. Bill more depressed, its basal depth less than its width at rictus; breast yellow, rufous, glossy blue-black, or green.
    - c. Upper parts green or green and blue; throat green ..... *Chlorophonia* (p. 4)
    - cc. Upper parts dark steel blue, glossy violet-black, metallic olive-greenish, or greenish gray (with or without yellow, blue or rufous on pileum); throat black, dark steel blue, violet-blackish, gray, olive-greenish, or yellow.
      - Euphonia* (p. 8)
  - bb. Bill thicker, its basal depth equal to its width at rictus; breast gray.
    - Pyrrhuphonia* (p. 31)
- aa. Tail more than two-thirds as long as wing, or else (*Chlorochrysa*<sup>3</sup>) the bill very

- d. Outermost primary much longer than third, usually equal to or longer than fourth; if wing less than 71.1 the outermost primary equal to fifth.
- e. Exposed culmen decidedly shorter than middle toe without claw.
- f. Tarsus decidedly longer than middle toe with claw, more than one-third as long as tail.....**Calospiza** (p. 34)
- ff. Tarsus not decidedly, if at all, longer than middle toe with claw, not more than one-third as long as tail.
- g. Head unicolored (blue, gray, or olive); maxillary tomium nearly straight.....**Tanagra** (p. 54)
- gg. Head conspicuously striped with black and white;<sup>1</sup> maxillary tomium concave anteriorly, convex posteriorly.....**Spindalis** (p. 62)
- ee. Exposed culmen not shorter than middle toe without claw.
- f. Bill stouter, more or less tumid basally; maxillary tomium with a more or less distinct median tooth, or else plumage unicolored (red in adult males, yellowish in females and young); adult males with more or less of red.....**Piranga** (p. 75)
- ff. Bill more slender, compressed, the culmen sharply ridged; maxillary tomium without trace of median tooth, and plumage parti-colored; adult males without any red (except sometimes a supra-auricular stripe).
- g. Larger (wing more than 76.2); bill deeper (depth at base nearly half exposed culmen); outermost (ninth) primary shorter than fifth; under parts black or gray, with white axillary patch.  
**Heterospingus** (p. 103)
- gg. Smaller (wing less than 76.2); bill shallower (depth at base decidedly less than half exposed culmen); outermost (ninth) primary longer than fifth; under parts yellow or partly yellow.  
**Hemithraupis** (p. 105)
- dd. Outermost (ninth) primary little, if any, longer than third, or else (*Tachyphonus*, part) wing less than 71.1, and outermost primary shorter than fifth.
- e. Loral and frontal feathers stiff, erect, dense, plush-like.
- f. Mandibular rami enlarged and swollen, longer than gonys; sexes different in color (adult males black and red or black and yellow, adult females much duller).....**Ramphocelus** (p. 107)
- ff. Mandibular rami not unusually developed, shorter than gonys; sexes alike in color (black and red).....**Phlogothraupis** (p. 120)
- ee. Loral and frontal feathers normal.
- f. Maxilla strongly hooked at tip, its tomium with a conspicuous median "tooth".....**Lanio** (p. 122)
- ff. Maxilla not strongly hooked at tip, its tomium without a conspicuous (if any) "tooth."
- g. Bill larger, the exposed culmen two-thirds, or more, as long as tarsus.
- h. Bill more slender (depth of maxilla immediately in front of nostrils less than one-third the distance from nostril to tip).
- i. Tail even, shorter than distance from bend of wing to tips of secondaries; ninth primary longer than third; color olive-green above, gray or gray and white below; head black and white; sexes alike in color.....**Phœnicophilus** (p. 126)
- ii. Tail rounded, equal to or longer than distance from bend of wing to tips of secondaries; ninth primary shorter than third; adult males black, usually with white on wing coverts (sometimes with red, yellow, etc., on pileum); adult females rufous, brownish, olive, or yellowish.....**Tachyphonus** (p. 129)

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<sup>1</sup> Except in females and young.

- Ah. Bill stouter (depth of maxilla immediately in front of nostril more than one-third the distance from nostril to tip).  
 i. Tail equal to distance from bend of wing to tips of secondaries; pileum with a bushy crest.  
 j. Bill smaller, more slender; maxillary tomium without median tomial tooth; occipital crest (and rest of head) gray; sexes alike (yellowish olive-green above, yellow below).  
     *Eucometis* (p. 138)  
 jj. Bill larger, stouter; maxillary tomium with a more or less distinct median "tooth;" vertical crest red; sexes very different (adult males mostly, or largely, red; adult females brown or olive above, including head, yellowish below).  
     *Phaenotothraupis* (p. 141)  
 ii. Tail decidedly shorter than distance from bend of wing to tips of secondaries; pileum not crested.  
 j. Bill stouter, much broader basally (basal width greater than basal depth, and equal to length of gonys); tarsus not more than one-fourth as long as wing; coloration plain olive-green, more yellowish below.....*Chlorothraupis* (p. 154)  
 jj. Bill more slender, narrower basally (basal width less than basal depth, decidedly less than length of gonys); tarsus much more than one-fourth as long as wing; coloration plain grayish brown above, whitish below....*Mesospingus* (p. 156)  
 gg. Bill much smaller, the exposed culmen much less than two-thirds as long as tarsus .....*Chlorospingus* (p. 157)  
 cc. Outermost (ninth) primary shorter than innermost (first).  
     *Mitrospingus* (p. 167)

#### Genus CHLOROPHONIA Bonaparte.

*Chlorophonia* (not *Chlorophoneus* Cahanis, 1850)<sup>1</sup> BONAPARTE, Rev. et Mag. de Zool., III, 1851, 137. (Type, *Tanagra viridis* Vieillot.)

*Chloreuphonia* (emendation) SCLATER, Jardine's Contr. Orn., 1851, 94.

*Troglodythia*? REICHENBACH, Av. Syst. Nat., 1850, pl. 63. (Type *Tanagra viridis*

straight (*C. viridis*) or more or less strongly sinuated, the posterior convexity (beneath nostril) more decided than the anterior concavity; mandibular tomium nearly straight. Nostril exposed, small, roundish. Rictal bristles not obvious. Wing rather long (more than three and a half to about four and three-fourths times as long as tarsus), pointed (ninth to sixth primaries longest and nearly equal, ninth decidedly shorter than sixth only in *C. pretrii*); primaries exceeding secondaries by about length of tarsus or a little more. Tarsus longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw decidedly shorter than the digit.

*Coloration*.—Chiefly or largely uniform bright grass green, with more or less of yellow on under parts, the upper parts often partly blue.

*Range*.—Tropical America (except West Indies), from southern Mexico to southern Brazil and Bolivia.

There is considerable variation in details of form among the different species of this genus. The type, *C. viridis*, has the bill far more slender than any of the others, with the culmen and gonys less strongly curved, the maxillary tomium nearly straight and very indistinctly notched subterminally; the tip of the maxilla scarcely decurved or uncinat, and the mandibular tomium slightly concave anteriorly, the tip of the mandible being thus obviously recurved and acuminate. The tarsus is also relatively shorter, and the upper parts are mainly blue. *C. occipitalis* represents the opposite extreme in shape of bill, all the other species being much nearer to it, however, than to *C. viridis*. All have the four outermost primaries nearly equal and longest, except *C. pretrii*, which has the ninth much shorter than the sixth, the eighth being longest. The last-named species is unique in having a yellow patch on the rump.

#### KEY TO THE SPECIES OF CHLOROPHONIA.

- a. A patch of blue on occiput and hinder part of crown.
  - b. Breast bright yellow, margined anteriorly by a semicircular narrow band or collar of blackish or dark brown. (Adult males.)
    - c. Forehead and superciliary region green; occipital spot smaller, turquoise blue; hindneck green. (Southern Mexico; Guatemala.)  
*Chlorophonia occipitalis*, adult male (p. 6)
    - cc. Forehead and superciliary region yellow; occipital spot large, campanula blue; hindneck cerulean or turquoise blue. (Costa Rica; Veragua; Chiriqui.) ..... *Chlorophonia callophrys*, adult male (p. 7)
  - bb. Breast green, not margined anteriorly by blackish or dark-brown collar. (Adult females.)
    - c. Occipital spot smaller, turquoise blue; hindneck entirely green, without distinct, if any, blue collar across lower part.  
*Chlorophonia occipitalis*, adult female (p. 6)
    - cc. Occipital spot larger, campanula blue; hindneck mostly blue, with distinct collar of turquoise blue across lower portion.  
*Chlorophonia callophrys*, adult female (p. 7)
- aa. No blue on pileum, or else this merely indicated. (Immature males and females and young.)

## CHLOROPHONIA OCCIPITALIS (Du Bus).

## MEXICAN CHLOROPHONIA.

*Adult male*.—General color plain bright grass green or parrot green, rather lighter on chin, throat, and chest; a large oval spot or patch of bright turquoise blue on occiput; a bar of turquoise blue across posterior margin of sides of neck, sometimes continued across lower hindneck; breast, abdomen, anal region, and under tail-coverts bright yellow (lemon or gamboge), the former margined anteriorly by a narrow semicircular band of chestnut-brown, darkening into almost black next to green of chest; sides and flanks bright yellowish green; bill (in dried skins) grayish brown or horn color, becoming blackish terminally; legs and feet light brownish (in dried skins); length (skins), 124.5–134.6 (125.7); wing, 76.2–78.7 (77.7); tail, 46.2–46.7 (46.5); exposed culmen, 10.2–10.7 (10.4); depth of bill at base, 6.9–7.1; tarsus, 17.8–18.8 (18.3); middle toe, 13.5–14.2 (13.7).<sup>1</sup>

*Adult female*. Similar to the adult male, but breast and other under parts light yellowish green, becoming light greenish yellow on abdomen, anal region, and under tail-coverts; no dark brown collar across upper breast; length (skins), 120.7–138.4 (126.2); wing, 75.9–78.2 (77); tail, 43.2–46.2 (44.5); exposed culmen, 8.4–9.7 (9.4); depth of bill at base, 6.4–7.1 (6.6); tarsus, 17.8–18.8 (18.3); middle toe, 13.2–14.7 (14).<sup>2</sup>

Southeastern Mexico, in States of Vera Cruz (Jalapa; Orizaba), Mexico (Valley of Mexico?), and Chiapas (Gineta Mountains), and highlands of Guatemala (Coban, Choctum, etc.).<sup>3</sup>

*Euphonia occipitalis* Du Bus, Esquis. Orn., 1847, pl. 14 (= female; Mexico).—  
BONAPARTE, Consp. Av., i, 1850, 233.—SCLATER, Jardine's Contr. Orn., 1851,

*Euphonia cyaneidorsalis* DUBOIS, Rev. et Mag. de Zool., xi, 1859, 49, pl. 2 (Guatemala; type lost).<sup>1</sup>

*Euphonia cyanodorsalis* JARDINE, Ibis, 1860, 103 (crit.).—SCLATER, Cat. Birds Brit. Mus. xi, 1886, 53, footnote.

[*Euphonia*] *cyanodorsalis* GRAY, Hand-list, ii, 1870, 79, no. 7163.

*A[crocompsa] cyanodorsalis* CABANIS, Journ. für Orn., ix, March, 1861, 89, in text.

*C[hlorophonia] cyanodorsalis* SCLATER and SALVIN, Exotic Orn., pt. vi, April, 1868, 83, 84, in text.

*Chloroph[onia] cyanodorsalis* DUBOIS, Ibis, 1881, 179, in text (crit.; considers it an accidental variety of *C. occipitalis*).

*Chlorophonia cyanodorsalis* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 255.

### CHLOROPHONIA CALLOPHRYS (Cabanis).

#### COSTA RICAN CHLOROPHONIA.

*Adult male*.—Forehead and broad superciliary stripe (extending to sides of occiput) bright yellow (gamboge or rich chrome), the forehead sometimes tinged or mixed with yellowish green; anterior portion of crown yellowish green; rest of crown, with occiput, clear campanula blue, forming a large oblong or oval patch; hindneck azure blue, becoming more turquoise blue below, where sending off lateral branches across posterior margin of sides of neck; rest of head and neck, with chest, uniform bright yellowish green, the eyelids tinged with blue; whole breast, abdomen, anal region, and under tail-coverts bright yellow (lemon or gamboge), the yellow of the breast separated from the green of the chest by a semicircular narrow band of brownish black tinged with chestnut; sides and flanks uniform bright yellowish green; back, scapulars, rump, upper tail-coverts, wings, and tail plain bright yellowish grass green, the primaries blackish, edged with green; bill grayish brown or horn color basally, blackish terminally; legs and feet light horn color (in dried skins); length (skins), 133.4–135.9 (134.6); wing, 76.2–79.2 (77.5); tail, 43.2–46.7 (45.5); exposed culmen, 9.1–9.7 (9.4); depth of bill at base, 5.8–6.4 (6.1); tarsus, 18.3–19.1 (18.5); middle toe, 13.2–13.5 (13.2).<sup>2</sup>

*Adult female*.—Similar to adult male but with forehead and superciliary region green instead of yellow; occipital patch slightly darker blue; blue of hindneck mixed with green; breast green instead of yellow, and yellow of abdomen, etc., paler and less sharply defined against green of sides and flanks; length (skins), 121.9–138.4 (130.8); wing, 72.4–74.9 (73.4); tail, 40.6–42.9 (41.7); exposed culmen, 9.7–10.2 (9.7); depth of bill at base, 6.4–7.1 (6.6); tarsus, 17.8–18.8 (18.3); middle toe, 13.2.<sup>2</sup>

*Immature male and female*.—Similar to the adult female, but colors duller, and without any blue on pileum or neck, or with only scattered blue feathers.

<sup>1</sup> See Sclater, Cat. Birds Brit. Mus., xi, 1886, 53, footnote.

<sup>2</sup> Five specimens.



Highlands of Costa Rica (Rancho Redondo; San José; Birris; Cervantes; Candelaria; Navarro; Irazú), Veragua (Chitra; Calovevora; Cordillera del Chucu; Calobre), and Chiriqui (Volcan de Chiriqui).

*Triglyphidia callophrys* CABANIS, Journ. für Orn., viii, Sept., 1860, 331 (Costa Rica; coll. Berlin Mus.).

*Acrocompsa callophrys* CABANIS, Journ. für Orn., ix, Jan., 1861, 88.

*Chlorophonia callophrys* LAWRENCE, Ann. Lyc. N. Y., ix, 1863, 98 (Rancho Redondo, San José, and Birris, Costa Rica).—SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 173 (Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 297 (Cervantes and Candelaria, Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 185 (Volcan de Chiriqui; Chitra, Cordillera del Chucu, and Calovevora, Veragua).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Navarro and Candelaria, Costa Rica).—SALVIN and GODMAN, Biol. Cent. Am., Aves, i, 1883, 254 (Irazú, etc., Costa Rica; Calobre, etc., Veragua).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 58.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (San José, Cartago, Alajuela, Rancho Redondo, and Naranjo de Cartago).

[*Chlorophonia*] *callophrys* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.

*Chlorophonia callophrys* SCLATER and SALVIN, Exotic Orn., Dec., 1868, 84, pl. 68 (male and female).

#### Genus EUPHONIA Desmarest.

*Euphonia* DESMAREST, Hist. Nat. des Tangaras, 1805, sub pl. 19. (Type, *Pipra musica* Gmelin?)

*Euphone* (emendation) "CUV[ISER], Aves, 1829" (fide Scudder's Nomencl. Zool., Univ. Index, p. 120).

*Euphonia* (emendation) CABANIS, Mus. Hein., i, 1850, 31.—BONAPARTE, Consu. Gen. Avium, 1850, 232.

*Oyanophonia* BONAPARTE, Rev. et Mag. de Zool., 2d ser., iii, March, 1851, 138 (Type, *Pipra musica* Gmelin.)

*Acroleptes* "Schiff" BONAPARTE, Ann. Sci. Nat., sér. 4, i, 1854, 127. (Type, *Tanagera chlorotica* Linnæus?; see Cabanis, Journ. für Orn., 1861, 90.)

*Uchalela* BONAPARTE, Ann. Sci. Nat., sér. 4, i, 1854, 127. (Type, *Tanagera* ...)

width at base less even than half the distance from the nostril to tip of maxilla, its lateral outlines nearly straight, but less rapidly converging for terminal third; depth of bill at base about equal to its width at nostrils. (*E. minuta*.) (3) Bill extremely thick and swollen, with lateral outlines nearly straight, its width at base nearly equal to exposed culmen, and basal depth exceeding distance from nostril to tip of maxilla; culmen and gonys both very strongly convex. (*E. chalybæa*, type of *Ypophæa* Bonaparte.) Wing long (more than three and a half to four and a half times as long as tarsus), pointed (ninth to sixth primaries longest and usually nearly equal, the ninth sometimes longest and never as short as the fifth); primaries exceeding secondaries by not less than length of tarsus. Tail short (never more than two-thirds nor less than half as long as wing), even, slightly rounded or slightly emarginated, the rectrices rather broad, with rounded tips. Tarsus equal to or longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw shorter than its digit; all the claws well curved and sharp. Plumage soft, silky, and blended.

*Coloration*.—Adult males glossy, more or less metallic, above, the prevailing color usually black glossed with violet, steel blue, or green, with the head above usually with more or less of blue, yellow, or rufous; if not glossy black above, the color semimetallic olive-green or bluish gray; under parts usually mainly yellow (sometimes orange-rufous, rarely grayish), with or without black throat and chest. Females with olive-green and yellowish (sometimes with gray and white also) replacing the black and brighter hues of the males. Young essentially similar to adult females, wholly unstreaked.

Notwithstanding the vast difference in the form of the bill exhibited by the three extremes described above, the remaining thirty-odd species show every possible intermediate condition, and consequently, being unable to discover any other segregative characters, I am disposed to ignore the so-called genus *Ypophæa*, recognized by Dr. Sclater in the eleventh volume of the Catalogue of Birds in the British Museum. Dr. Sclater says that this lacks the notch near the tip of the maxillary tomium; but I find it quite as distinctly indicated in specimens examined as in some examples of true *Euphonia*. Should *Ypophæa* be recognized as a genus it would be quite necessary to restrict *Euphonia* to *E. musica* and its nearer allies, make *E. minuta* the type of another genus, and perhaps carry the subdivision still further.

#### KEY TO THE SPECIES OF EUPHONIA.

- a. Crown, occiput, and hindneck light blue.
- b. Back dark steel blue or glossy blue-black.
- c. Rump black like back; forehead chestnut. (Southern Mexico to Isthmus of Panama.) ..... *Euphonia elegantissima*, adult male (p. 12)
- cc. Rump yellow; forehead yellow.

- d.* Chin and throat glossy blue-black; under parts of body and lower rump orange-ochraceous. (Haiti.).....*Euphonia musica*, adult male (p. 13)
- dd.* Chin and throat yellow; under parts of body and whole rump yellow. (Porto Rico.).....*Euphonia sclateri*, adult male (p. 15)
- bb.* Back olive-green
- c.* Forehead chestnut; throat pale cinnamon.  
*Euphonia elegantissima*, adult female (p. 12)
- cc.* Forehead not chestnut; throat yellow.
- d.* Forehead ochraceous; crown, occiput, and hindneck azure blue.  
*Euphonia musica*, adult female (p. 14)
- dd.* Forehead gamboge yellow; crown, occiput, and hindneck light cerulean or turquoise blue.
- e.* Sides of head greenish dusky; back glossed with metallic bluish green. (Lesser Antilles, St. Bartholomew to Grenada.)  
*Euphonia flavifrons*, adult male (p. 15)
- ee.* Sides of head yellowish olive-green, like back; back without distinct metallic gloss.
- f.* Bill larger (exposed culmen 7.4 or more, depth at base 4.8 or more); under parts less yellowish olive-green.  
*Euphonia flavifrons*, adult female (p. 16)
- ff.* Bill smaller (exposed culmen 6.7, depth at base 4.6); under parts more yellowish olive-green....*Euphonia sclateri*, adult female (p. 15)
- aa.* Crown, occiput, and hindneck not light blue.
- b.* Back dark steel blue or glossy blue-black or violet-black.
- c.* Throat black or dark steel blue or violet.
- d.* Throat black; forehead, crown, and occiput rufous-tawny. (Costa Rica; Veragua.).....*Euphonia annexa*, adult male (p. 17)
- dd.* Throat dark steel blue or glossy violet-black; forehead yellow.
- e.* Under tail-coverts tawny-ochraceous, abdomen yellowish ochraceous. (Northern Colombia to Isthmus of Panama.)  
*Euphonia fulvicauda*, adult male (p. 18)
- ee.* Under tail-coverts not tawny; abdomen pure yellow.
- f.* Under tail-coverts lemon or canary yellow.
- ff.* Under tail-coverts tawny-ochraceous, abdomen black or with only a small

- gg.* Bill longer and more slender (exposed culmen 7.1–7.6, depth at base 3.3–3.7); yellow of forehead deeper (bright lemon), not extending beyond middle of eyes; yellow of under parts deeper, with dusky clouding on sides and flanks. (Guatemala to Isthmus of Panama.)

***Euphonia minuta humilis*, adult male (p. 23)**

- dd.* Throat yellow, like rest of under parts.

- e.* Yellow of forehead not extending beyond middle of eyes, its posterior outline directly transverse or truncated. (Southern Mexico to Costa Rica.) ..... ***Euphonia hirundinacea*, adult male (p. 25)**

- ee.* Yellow of forehead extending much beyond eyes, with strongly convex or rounded posterior outline. (Costa Rica to Colombia.)

***Euphonia crassirostris*, adult male (p. 28)**

- bb.* Back olive-green or olive-gray.

- c.* Abdomen or under tail-coverts (or both) tawny or ochraceous; back, etc., strongly glossed with metallic greenish.

- d.* Forehead and fore part of crown lemon yellow. (Southern Mexico to Costa Rica.) ..... ***Euphonia gouldi*, adult male (p. 29)**

- dd.* Forehead chestnut.

- e.* Abdomen deep olive-yellowish..... ***Euphonia gouldi*, adult female (p. 29)**

- ee.* Abdomen tawny or ochraceous.

- f.* Larger (wing 57.4–58.4); whole abdomen tawny.

***Euphonia gracilis*, adult female (p. 20)**

- ff.* Smaller (wing 48.8); only median line of abdomen tawny or ochraceous.

***Euphonia fulvicrissa*, adult female (p. 18)**

- cc.* Neither abdomen nor under tail-coverts tawny or ochraceous.

- d.* Back bright olive-green.

- e.* Occiput olive-green, like back.

- f.* Median under parts (broadly) grayish, in strong contrast with yellowish olive-green of sides and flanks.

- g.* Under tail-coverts grayish brown with whitish tips; forehead strongly tinged with rusty; gray of median under parts much darker.

***Euphonia annexa*, adult female (p. 17)**

- gg.* Under tail-coverts light olive-yellow; forehead and crown yellowish olive-green, like rest of upper parts; gray of median under parts much paler..... ***Euphonia hirundinacea*, adult female (p. 26)**

- ff.* Median under parts yellow, like sides and flanks, or at least so on chest.

- g.* Under parts entirely yellow or olive-yellow; under tail-coverts yellow.

- h.* Larger (wing 59.7–63.5), with much stouter bill; inner webs of outermost rectrices with a subterminal white spot.

***Euphonia crassirostris*, adult female (p. 28)**

- hh.* Smaller (wing 51.0–51.8); inner webs of outermost rectrices without any white ..... ***Euphonia luteicapilla*, adult female (p. 21)**

- gg.* Under parts with lower throat pale gray, lower abdomen and under tail-coverts white.

***Euphonia minuta humilis*, adult female (p. 24)**

- ee.* Occiput grayish, more or less distinctly different from olive-green of back.

- f.* Abdomen and under tail-coverts white.

***Euphonia godmani*, adult female (p. 25)**

- ff.* Under parts wholly yellowish, the under tail-coverts clear lemon yellow ..... ***Euphonia affinis*, adult female ? (young male ?) (p. 22)**

- dd.* Back olive-grayish.


***Euphonia affinis*, young female ? (adult female ?) (p. 23)**

## EUPHONIA ELEGANTISSIMA (Bonaparte).

## BLUE-HOODED EUPHONIA.

*Adult male.*—Forehead (more or less broadly) chestnut, margined behind by a bar of black; crown, occiput, hindneck, and sides of neck uniform light cerulean or turquoise blue, the feathers dusky grayish beneath the surface; back, scapulars, lesser wing-coverts, rump, and upper tail-coverts uniform dark steel blue, more or less tinged with violet, especially on back; wings and tail black with steel blue edgings, these broader and more violet on middle and greater wing-coverts, very indistinct and (when obvious) more greenish on primaries; loreal, sub-orbital, auricular, and malar regions, chin, and throat, uniform black, more or less glossed with steel blue or violet; rest of under parts deep orange-ochraceous or orange-tawny, deeper, more chestnut-tawny, on chest; under wing-coverts and axillars pale yellow, or white tinged with yellow or buffy; bill black with basal portion of mandible grayish; legs and feet horn color (in dried skins); length (skins), 100.3–116.8 (108.5); wing, 63–71.1 (66); tail, 37.6–45.2 (40.1); exposed culmen, 6.6–7.1 (6.9); tarsus, 12.2–15.2 (14.5); middle toe, 9.7–12.2 (11.2).<sup>1</sup>

*Adult female.*—Pileum and hindneck as in adult male, but black bar separating chestnut of forehead from blue of crown less distinct; rest of upper parts bright olive-green, more or less glossed with metallic bluish green; remiges and rectrices blackish or dusky edged with olive-green (very narrowly on primaries, very broadly on tertials, which have outer webs mostly or wholly olive-green); auricular, suborbital, and loreal regions olive-green, the malar region similar but paler or more yellowish; chin and throat light ochraceous or cinnamon-buff; rest of under parts light yellowish olive-green, more olive-yellowish medially; bill and feet as in adult male; length (skins), 99.1–114.3 (110.2); wing,



- Euphonia tibicen* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1831, 2; Journ. für Orn. 1863, 56 (Jalapa, Vera Cruz; = *nomen nudum*!).
- Pipra elegantissima* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 112 (Mexico).
- E[uphonia] elegantissima* GRAY, Gen. Birds, App., 1849, 17.—RIDGWAY, Man. N. Am. Birds, 1887, 453.
- [*Euphonia*] *elegantissima* BONAPARTE, Consp. Av., i, 1850, 232.
- E[uphonia] elegantissima* CABANIS, Mus. Hein., i, 1850, 31 (Mexico).
- Euphonia elegantissima* SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 173 (Costa Rica).
- Euphonia elegantissima* DU BUS, Esquis. Orn., 1850, pl. 8 (San Pedro).—SCLATER, Jardine's Contr. Orn., 1851, 83 (monogr.); Proc. Zool. Soc., Lond., 1855, 66 (sub *Pipra galericulata*); 1856, 272 (monogr.), 303 (Cordova, Vera Cruz); 1858, 303 (La Parada, Oaxaca); 1859, 364 (Jalapa, Vera Cruz), 378 (Juquila, Oaxaca; descr. nest and eggs); 1864, 173 (Valley of Mexico); Synop. Av. Tanagr., 1856, 98; Cat. Am. Birds, 1862, 56 (s. Mexico); Cat. Birds Brit. Mus., xi, 1886, 62 (near City of Mexico; Orizaba, Vera Cruz; Oaxaca; ridge above Calderas, Choctum, and Coban, Guatemala; Volcan de Cartago, Irazú distr., and Turrialba, Costa Rica; Calovevora, Veragua).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 330 ("Texas"); Rep. Pacific R. R. Surv., ix, 1858, 304; ed. 1860 ("Birds N. Am."), atlas, pl. 71, figs. 2, 3; Cat. N. Am. Birds, 1859, no. 224.—SCLATER and SALVIN, Ibis, 1859, 16 (Guatemala).—CABANIS, Journ. für Orn., 1860, 331.—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (San José, Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 550 (hot, temperate, and alpine regions, Vera Cruz).—FRANTZIUS, Journ. für Orn., 1869, 297 (Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 185 (Calovevora, Veragua).—DUGÈS, La Naturelleza, i, 1870, 140 (Guanajuato).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (San José, Costa Rica; food; song).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 160.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 256.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 606.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 140 (Chachapa, Puebla; Jalapa, Vera Cruz).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Cartago and San José, Costa Rica).—CHERRIE, Auk, vii, 1890, 334 (San José, Costa Rica); ix, 1892, 24 (San José; descr. abnormally colored male).—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 27 (Jalapa).
- [*Euphonia*] *elegantissima* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.
- Euphonia coelestis* LESSON, Rev. Zool., 1839, 42 (Mexico).—DU BUS, Esquis. Orn., Orn., 1847, pl. 14.
- Pipra galericulata* GIRAUD, Sixteen Sp. Texan Birds, 1841, fol. 21, pl. 5, fig. 2 ("Texas;" type in coll. U. S. Nat. Mus.; see Sclater, Proc. Zool. Soc. Lond., 1855, 66).

## EUPHONIA MUSICA (Gmelin).

## HAITIAN EUPHONIA.

*Adult male*.—Forehead yellow (dull lemon to saffron or dull cadmium), bordered behind by a bar of black or glossy blue-black; crown, occiput, hindneck, and sides of neck plain azure blue, the feathers dusky grayish beneath the surface; back, scapulars, and upper tail-coverts dark violaceous steel blue, or blue-black glossed with violet; wings and tail black with dark violaceous steel blue edgings; upper rump lemon yellow, passing into ochraceous or tawny-ochraceous on lower rump; lores black; suborbital, auricular, and malar regions,

chin, and throat uniform dark violaceous steel blue, or black glossed with that color; rest of underparts bright yellowish ochraceous, more yellowish on breast and chest, where becoming deeper, more tawny, next to black of foreneck, and gradually becoming deeper posteriorly, the under tail-coverts orange-tawny; thighs light olive-yellow, the feathers dusky beneath the surface; bill black, the mandible brownish basally; legs and feet dusky horn color (in dried skins); length (skins), 105.4–108 (106.7); wing, 63; tail, 35.8–37.6 (36.6); exposed culmen, 6.4–6.6; depth of bill at base, 4.1–4.8 (4.8); tarsus, 14.7–15; middle toe, 10.2–10.9 (10.4).<sup>1</sup>

*Adult female*.—Pileum as in adult male, but black bar between yellowish of forehead and blue of crown narrower; back, scapulars, lesser, middle, and greater wing-coverts, plain olive-green, slightly glossed with metallic bluish green; rump and upper tail-coverts similar, but more yellowish olive-green; secondaries and rectrices dusky with olive-green edgings; primaries dusky, narrowly edged with pale glaucous or whitish, passing into olive-green basally; auricular and suborbital regions dusky olive-green, slightly tinged with blue, the malar region lighter and more bluish; chin and throat canary yellow; rest of under parts deep olive-yellow or light yellowish olive-green; bill and feet as in adult male; length (skin), 106.7; wing, 61.7; tail, 36.1; exposed culmen, 6.1; depth of bill at base, 4.6; tarsus, 15; middle toe, 10.4.

Island of Haiti, Greater Antilles.

[*Pipra*] *musica* GMBLIN, Syst. Nat., i, 1786, 1004 (based on *L'Organiste, de St. Domingue* Buffon, Pl. Enl., pl. 809, fig. 1).

*Tanagra munca* VILLOT, Enc. Méth., ii, 1823, 783.—BRYANT, Proc. Bost. Soc. N. H., xi, 1866, 92 (Santo Domingo).

[*Myiophobus musica* (Linn.) Aud. Birds, i, 546, 367.

## EUPHONIA SCLATERI Sundevall.

## PORTO RICAN EUPHONIA.

*Adult male*.—Forehead saffron yellow, margined behind by a bar of black across anterior part of crown; rest of pileum, hindneck, and sides of neck uniform cerulean blue; back scapulars and upper tail-coverts uniform glossy blue-black, with a slight violet tinge; wings and tail black with glossy blue-black or dark steel blue edgings; entire rump and under parts of body rich saffron yellow, the chin and throat similar but rather paler; lores, suborbital region, auricular region, and part of malar region uniform glossy black; maxilla black, paler beneath nostrils; mandible grayish basally, blackish terminally; legs and feet horn color (in dried skins); length (skins), 97.8–102.9 (99.6); wing, 58.4–60.5 (59.4); tail, 33.5–34 (33.8); exposed culmen, 6.9–7.1 (6.9); depth of bill at base, 4.1–4.6 (4.3); tarsus, 14.7–15.2 (15); middle toe, 10.7–10.9 (10.7).<sup>1</sup>

*Adult female*.—Forehead gamboge yellow, margined posteriorly by an indistinct dusky bar across anterior part of crown; rest of pileum, hindneck, and sides of neck uniform light greenish blue (turquoise); loreal, suborbital, and auricular regions and most of malar region plain olive-green; back, scapulars, wing-coverts, and upper tail-coverts plain deep olive-green, with a slight gloss of metallic bluish green; rump yellowish olive-green; remiges and rectrices blackish, the latter and the secondaries with broad edgings of olive-green, the primaries with narrow edgings of the same or pale greenish gray; under parts deep olive-yellow, becoming purer yellow on chin, throat, abdomen, anal region, and under tail-coverts, the last with central portion more olive; bill and feet as in adult male; length (skin), 121.9; wing, 59.2; tail, 32.8; exposed culmen, 6.9; depth of bill at base, 4.6; tarsus, 15.2; middle toe, 10.9.<sup>2</sup>

Island of Porto Rico, Greater Antilles.

*Pipra musica* (not of Gmelin) VIEILLOT, Gal. Ois., Suppl., 1834. pl. s. n.

*Cyanophonia musica* BONAPARTE, Rev. et Mag. de Zool., 2d ser., iii, March, 1851, 138; Note sur les Tangaras, 1851, 12.

*Euphonia flavifrons* (not *Emberiza flavifrons* Sparrmann) SCLATER, Proc. Zool. Soc. Lond., 1856, 271 (Porto Rico); Synop. Av. Tanagr., 1856, 97 (Porto Rico).

[*Euphonia*] *flavifrons* GRAY, Hand-list, ii, 1870, 77, no. 7121.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.—CORY, List Birds W. I., 1885, 11.

*Euphonia sclateri* SUNDEVALL, Oefv. Vet.-Ak. Förh. Stockh., 1869, 596 (Porto Rico; coll. Stockholm Mus.; ex Bonaparte, manuscript).—GUNDLACH, Journ. für Orn., 1874, 311; 1878, 159; Anal. Soc. Esp. Hist. Nat., vii, 1878, 191.—CORY, Auk, iii, 1886, 194 (synonymy and description); Birds W. I., 1889, 81; Cat. W. I. Birds, 1892, 16, 113, 132.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 60.

## EUPHONIA FLAVIFRONS (Sparrmann).

## GREEN EUPHONIA.

*Adult male*.—Forehead lemon or gamboge yellow, margined posteriorly by a transverse line or bar of black; crown, occiput, hind-

<sup>1</sup> Three specimens.

<sup>2</sup> One specimen.



neck, and sides of neck uniform light cerulean or turquoise blue, the feathers dusky grayish beneath the surface; back, scapulars, wing-coverts, tertials, and upper tail-coverts uniform olive-green, glossed with metallic bluish green; rump yellowish olive-green, or bright olive-yellowish; secondaries, primaries, and rectrices blackish or dusky, edged with olive-green, the edgings on primaries narrower and inclining to pale grayish; lores blackish; suborbital, auricular, and malar regions dusky olive-green, the last sometimes partly yellow; chin and throat lemon yellow; rest of under parts uniform yellowish olive-green; under wing-coverts whitish, tinged with yellow; axillars light yellow; bill black, with basal portion of mandible grayish; iris brown; legs and feet horn color (in dried skins); length (skins), 106.7-120.7 (112.8); wing, 60.2-65.3 (63); tail, 37.6-41.1 (39.1); exposed culmen, 7.1-7.9 (7.6); depth of bill at base, 4.6-5.1 (4.8); tarsus, 15-17.5 (16.3); middle toe, 10.2-11.9 (11.2).<sup>2</sup>

*Adult female*.—Similar to adult male, but olive-green of back, wings, etc., decidedly lighter and without metallic bluish green gloss; rump much less yellowish; yellow of chin and throat paler and less strongly contrasted with color of cheeks and auriculars, the latter yellowish olive-green instead of dusky bluish olive-green; under parts usually paler and less yellowish olive-green; blue of hood usually slightly paler and duller, sometimes more greenish blue; black bar between yellow of forehead and blue of crown much less distinct, sometimes obsolete; length (skins), 101.6-121.9 (111); wing, 58.9-67.6 (62.2); tail, 37.1-40.6 (38.4); exposed culmen, 7.4-7.9 (7.6); depth of bill at base, 4.8-5.1 (4.8); tarsus, 15.7-17 (16.5); middle toe, 10.7-11.9 (11.2).<sup>2</sup>

Lesser Antilles (islands of St. Bartholomew, Guadeloupe, Dominica, Martinique, Santa Lucia, St. Vincent, and Grenada).

*Emberiza flavifrons* SPARRMANN, Mus. Carls., iv, 1789, no. 92 (= female; coll. Mus. Carlsonianum; no locality given).

[*Tanagra*] *flavifrons* LATHAM, Index Orn., Suppl., 1802, 47.

*Tanagra flavifrons* VIEILLOT, Enc. Méth., iii, 1823, 775.

*Euphonia flavifrons* SCLATER, Proc. Zool. Soc. Lond., 1856, 271, part (in synonymy); Synop. Av. Tanagr., 1856, 97 (do.); Cat. Am. Birds, 1862, 56 ("Cayenne;" "Trinidad"); Cat. Birds Brit. Mus., xi, 1886, 63 (Martinique; Santa Lucia; Guadeloupe; St. Bartholomew; Dominica; Grenada); Proc. Zool. Soc. Lond., 1889, 395 (Santa Lucia).—SUNDEVALL, Oefv. Vet.-Ak. Förh. Stockh., 1869, 583 (St. Bartholomew).—LAWRENCE, Proc. U. S. Nat. Mus., i, 1878, 56 (Dominica), 190 (St. Vincent), 269 (Grenada); i, 1879, 354 (Martinique; habits), 455 (Guadeloupe; habits; crit.); iii, 1880, 256 (Dominica); ix, 1886, 613 (Grenada).—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 166 (Santa Lucia).—CORY, Auk, iii, 1886, 193 (synonymy, part, and description); iv, 1887, 95 (Martinique); Birds W. I., 1889, 80 (do.); Cat. W. I. Birds, 1892, 16, 113. [*Euphonia*] *flavifrons* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.—CORY, List Birds W. I., 1885, 11.

### EUPHONIA ANNEÆ Cassin.

#### TAWNY-CAPPED EUPHONIA.

*Adult male*.—Entire pileum rich tawny, lighter, more ochraceous, anteriorly, deeper posteriorly, where having a rounded outline; rest of head and neck, including lores, chin, and throat, black, with a slight violet tinge, more pronounced on postocular region and nape; rest of upper parts rich dark semimetallic purplish black or very dark metallic purplish violet, becoming more bluish violet posteriorly, the remiges and rectrices black with bluish violet edgings; inner web of outermost rectrix with a large subterminal subquadrate space of white; under parts of body rich yellow (deep lemon yellow to indian yellow); under tail-coverts white, sometimes tinged with yellow; bill black, the basal portion of mandible grayish; iris brown; legs and feet dusky horn color (in dried skins); length (skins), 87.6–109.2 (107.4); wing, 62.2–68.3 (65); tail, 34.5–39.9 (37.1); exposed culmen, 7.9–8.4 (8.1); depth of bill at base, 4.8–5.3 (5.1); tarsus, 15.2–17 (16); middle toe, 10.9–12.2 (11.4).<sup>1</sup>

*Adult female*.—Above yellowish olive-green, the forehead and crown strongly tinged with tawny or light rusty; beneath pale gray medially, yellowish olive-green laterally, with distinct line of demarcation between the two colors; under tail-coverts whitish at tips, light brownish beneath surface; bill, legs, and feet as in adult male; length (skin), 102.9;<sup>2</sup> wing, 59.9; tail, 33.3; exposed culmen, 8.6; depth of bill at base, 5.1; tarsus, 17.3; middle toe, 11.7.<sup>3</sup>

Costa Rica (Angostura; Santa Rosa; Turrialba; Naranjo de Cartago; Rio Sucio) and Veragua (Calovevora; Calobre; Cordillera del Chucu; Santiago).

<sup>1</sup> Six specimens.

<sup>2</sup> Length before skinning 127.

<sup>3</sup> One specimen.

*Euphonia annex* <sup>1</sup> CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 172 (Santa Rosa, Costa Rica; coll. U. S. Nat. Mus.).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Angostura and Santa Rosa, Costa Rica).

*Euphonia annex* SALVIN, Proc. Zool. Soc. Lond., 1867, 137 (Santa Fé, Veragua; crit.); 1870, 186 (Calovevera and Cordillera del Chucu, Veragua); Ibis, 1874, 329 (Veragua).—FRANTZIUS, Journ. für Orn., 1869, 297 (Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 265 (Calobre, Veragua, etc.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 72 (Turrialba, Costa Rica, etc.).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Naranjo de Cartago; Rio Sucio).

[*Euphonia*] *annex* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.

*Euphonia rufivertex* SALVIN, Proc. Zool. Soc. Lond., 1866, 71, pl. 7 (Santiago, Veragua; coll. Salvin and Godman).

#### EUPHONIA FULVICRISSA Sclater.

##### FULVOUS-VENTED EUPHONIA.

*Adult male*.—Forehead and anterior part of crown lemon yellow, with posterior outline truncate or nearly so, the feathers with partially exposed central triangular spots of dusky; rest of upper parts glossy greenish bluish black or dark greenish steel blue, more greenish posteriorly, sometimes faintly tinged with violet on occiput and hindneck; remiges and rectrices black, with greenish steel blue edgings; inner webs of remiges with about the basal half abruptly white; outermost rectrix with a large, more or less oblique, subterminal spot or patch of white; sides of head and neck, chin, throat, and foreneck dark greenish steel blue, like upper parts, but less strongly glossed; rest of under parts deep yellow (indian yellow or saffron), becoming deep gallstone yellow or light ochraceous on abdomen, and deep ochraceous on under tail-coverts; maxilla black; mandible bluish gray, with dusky tip;

The female of *E. fulvicrissa* closely resembles that of *E. gracilis* in coloration, but is much smaller (wing less than 50.8 instead of 57.2 or more), has the rusty forehead flecked with dusky and margined laterally with a dusky line, the abdomen less extensively ochraceous, and the under tail-coverts much deeper ochraceous.

Northern Colombia (provinces of Santa Marta, Antioquia, etc.), including Isthmus of Panama, north to Veragua (Bugaba) and Chiriqui (Volcan de Chiriqui).

*Euphonia fulvicrissa* SCLATER, Proc. Zool. Soc. Lond., 1856, 276 (Santa Marta, Colombia; coll. P. L. Sclater); 1864, 349 (Panama; descr. female); Synop. Av. Tanagr., 1856, 102; Cat. Am. Birds, 1862, 58 (Santa Marta); Cat. Birds Brit. Mus., xi, 1886, 73 (Santa Marta, Remedios, Nichi, and Bogota, Colombia; Lion Hill and San Pablo station, Panama R. R.; Volcan de Chiriqui; Bugaba, Veragua).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 143 (Rio Truando, Colombia); 1865, 171 (Angostura and Pacuare, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 349 (Lion Hill, Panama R. R.); 1879, 498 (Antioquia, Colombia).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 264, pl. 16, fig. 2.—BERLEPSCH, Journ. für Orn., 1884, 288 (Antioquia, Colombia; descr. female).

[*Euphonia*] *fulvicrissa* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 18.

*Ph[onasca] fulvicrissa* CABANIS, Journ. für Orn., 1860, 330, in text.

*A[croleptes] fulvicrissus* CABANIS, Journ. für Orn., 1861, 91, in text.

*Euphonia gouldi* (not of Sclater) LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 332 (Lion Hill, Panama R. R.).—SALVIN, Proc. Zool. Soc. Lond., 1870, 186 (Bugaba, Veragua; Volcan de Chiriqui).

### EUPHONIA GRACILIS (Cabanis).

#### CABANIS' EUPHONIA.

*Adult male*.—Forehead and crown lemon yellow, the feathers with partially exposed central triangular spots of black, the yellow area rounded posteriorly, sometimes almost pointed on median line; rest of upper parts, together with sides of head and neck, chin, throat, and upper portion of chest (the latter with strongly convex posterior outline) glossy blue-black or dark steel blue, more or less tinged with violet anteriorly, sometimes more greenish posteriorly; remiges and rectrices black with greenish steel blue or dark bluish green edgings, these broad on tertials and rectrices, very narrow on primaries; inner webs of secondaries with basal half abruptly white, the inner webs of primaries (except two to four outermost) abruptly white basally; no white on rectrices; under parts of body and under tail-coverts clear rich yellow (rich lemon, sometimes approaching indian yellow); bill black, the mandible apparently more grayish basally; legs and feet dusky horn color (in dried skins); length (skins), 96.5–101.6 (98.8); wing, 55.9–61 (58.4); tail, 30.5–32.5 (31.5); exposed culmen, 8.6–8.9; depth of bill at base, 4.8–5.1 (4.8); tarsus, 16–16.3; middle toe, 10.7–11.4 (10.9).<sup>1</sup>

<sup>1</sup> Four specimens.

*Adult female*.—Forehead (extending backward laterally to above middle of eyes) chestnut-rufous; rest of upper parts plain olive-green, more yellowish on lower rump and upper tail-coverts, the crown, occiput, hindneck, back, upper rump, scapulars, and smaller wing-coverts glossed with metallic bluish green; remiges and rectrices dusky with yellowish olive-green edgings, broadest on tertials, narrowest and more yellowish on primaries; sides of head and neck and most of under parts yellowish olive-green or deep olive-yellowish, lighter and more decidedly yellowish on chin, throat, and anterior portion of malar and loreal regions; entire abdomen light tawny or deep ochraceous; anal region and under tail-coverts similar, but more orange-ochraceous; maxilla black, mandible grayish with dusky tip; legs and feet dusky horn color; length (skins), 94–100.3 (97); wing, 57.4–58.4 (57.9); tail, 29.2–32 (30.5); exposed culmen, 8.1–8.6 (8.4); depth of bill at base, 4.8–5.1 (4.9); tarsus, 15.5–15.7 (15.7); middle toe, 10.7–10.9 (10.9).<sup>1</sup>

In the metallic olive-green color of the upper parts and tawny abdomen the adult female of *E. gracilis* presents a strong resemblance to the adult male of *E. gouldi*; but the latter may at once be distinguished by the yellow instead of chestnut forehead, the deeper tawny of the abdomen and under tail-coverts (especially the latter), the former being margined laterally with yellow and the decidedly less bluish-green gloss of the upper parts.

Costa Rica (San José; Pozo Azul de Pirris) and Chiriqui (Volcan de Chiriqui; Bugaba).

*Phonasca gracilis* CABANIS, Journ. für Orn., viii, Sept. 1860, 333 (San José, Costa Rica; coll. Berlin Mus.).

*Euphonia gracilis* SCLATER, Cat. Am. Birds, 1862, 359 (Costa Rica), Cat. Birds

convex posterior outline), back, scapulars, rump, upper tail-coverts, and wing-coverts glossy blue-black or dark steel blue, more or less tinged with violet on head and neck; remiges and rectrices black, with dark greenish steel blue edgings; no white on inner webs of rectrices; under parts of body clear indian yellow, the under tail-coverts paler (lemon yellow); bill light grayish (bluish gray in life?) basally, blackish terminally; legs and feet dark horn color (in dried skins); length (skins), 94–95.3 (94.5); wing, 55.1–55.9 (55.6); tail, 31.2–33.5 (32); exposed culmen, 7.4–7.9 (7.6); depth of bill at base, 4.3–4.6 (4.4); tarsus, 14.2–14.7 (14.5); middle toe, 9.7–10.2 (9.9).<sup>1</sup>

*Adult female*.—Above plain yellowish olive-green, the remiges and rectrices dusky with yellowish olive-green edgings; under parts dull yellow (intermediate between wax yellow and gamboge), rather clearer medially, slightly more olivaceous laterally; bill and feet as in adult male; length (skins), 86.4–92.7 (89.4); wing, 51.1–51.8 (51.3); tail, 28.2–30 (29); exposed culmen, 7.1–7.6 (7.4); depth of bill at base, 4.1–4.3; tarsus, 13.5; middle toe, 9.4.<sup>2</sup>

*Immature male*.—Variously intermediate in coloration between the adult female and adult male, the black beginning first on lores and chin and covering throat and foreneck before appearing on upper parts; the forehead and superciliary region in this stage yellow, the crown olive-green, like rest of upper parts.

*Young male*.—Similar in coloration to adult female.

Nicaragua (Rio Escondido) to Isthmus of Panama (Paraiso Station, Panama Railroad).

*Phonasca luteicapilla* CABANIS, Journ. für Orn., viii, Sept., 1860, 332 (Costa Rica; coll. Berlin Mus.).

*Euphonia luteicapilla* LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 297 (San José, Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 186 (Bugaba, Chiriqui; Boquete de Chitra, Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 260, pl. 16, fig. 1 (Turrialba, Costa Rica; Volcan de Chiriqui; Cordillera del Chucu, Veragua; Paraiso Station and Chepo, Isth. Panama).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 68.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (San José, Las Trojas de Puntarenas, Pacaca, and Monte Redondo de San José).—CHERRIE, Auk, ix, 1892, 24 (San José, Costa Rica; plumage of young male).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 488 (Rio Escondido, Nicaragua).

[*Euphonia*] *luteicapilla* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.

*A[croleptes] luteicapillus* CABANIS, Journ. für Orn., 1861, 91, in text.

### EUPHONIA AFFINIS (Lesson).

#### LESSON'S EUPHONIA.

*Adult male*.—Forehead and anterior portion of crown lemon yellow (extending farther backward laterally, or to beyond eyes), the first narrowly bordered anteriorly with black; rest of head, all round, with

<sup>1</sup> Three specimens.

<sup>2</sup> Two specimens.

upper foreneck, uniform dark metallic violet or black with a strong violet gloss; back, scapulars, lesser wing-coverts, rump, and upper tail-coverts dark steel blue or glossy blue-black, the first three usually more or less tinged (sometimes strongly) with violet; larger wing-coverts, remiges, and rectrices black; middle and greater wing-coverts, tertials, and rectrices broadly margined with dark steel bluish; two outermost rectrices with a large subterminal patch of white on inner web; inner webs of secondaries abruptly white for basal half or more; under parts of body pure yellow (rich lemon to chrome or sometimes almost indian yellow); under wing-coverts and axillars white, usually tinged with yellow, especially the latter; maxilla black, becoming grayish beneath nostril; mandible grayish (light bluish gray in life), the tip blackish; legs and feet dusky horn color (in dried skins); length (skins), 86.4-98.6 (93.2); wing, 49.3-54.4 (51.8); tail, 28.5-35.6 (32); exposed culmen, 6.9-7.6 (7.4); depth of bill at base, 4.3-4.8 (4.6); tarsus, 12.2-13.5 (13); middle toe, 8.4-10.2 (9.7).<sup>1</sup>

*Adult female*.—Forehead yellowish olive-green, passing into grayish olive or olive-gray on crown, occiput, and hindneck, this into grayish olive-green on back, scapulars, wings, and upper rump, the lower rump more yellowish olive-green; under parts olive-yellowish or light grayish yellow anteriorly, passing into brighter and purer yellow posteriorly (under tail-coverts lemon or canary yellow, the abdomen nearly the same); bill and feet as in adult male; length (skins), 86.4-96.5 (92.2); wing, 49-53.6 (51.3); tail, 29.5-32.5 (31.2); exposed culmen, 6.6-7.6 (7.1); depth of bill at base, 3.8-4.6 (4.3); tarsus, 13.2-14 (13.5); middle toe, 9.7-9.9 (8.9).<sup>2</sup>

<sup>1</sup> Twenty-two specimens.

<sup>2</sup> Ten specimens, many of them in the plumage described as that of the immature

*Immature (?) female*.—Similar to the adult female, as described, but grayer above, the occiput and hindneck distinctly ashy; under parts less yellowish anteriorly, the throat, chest, and sides of breast sometimes yellowish gray. (*Immature males* are variously intermediate in coloration, according to age, between the adult male and female.)

Southeastern Mexico, in States of Tamaulipas (Alta Mira), Vera Cruz (Orizaba, etc.), Oaxaca (Barrio; Tehuantepec), Yucatan (Merida), and southward to Costa Rica (San Juan; Liberia; Alajuela).

*Tanagra (Euphonia) affinis* LESSON, Rev. Zool., 1842, 175 (Realejo, Nicaragua).

[*Euphonia*] *affinis* BONAPARTE, Consp. Av., i, 1850, 233.

*E[euphonia] affinis* GRAY, Gen. Birds, ii, 1849, 367.

*Euphonia affinis* SCLATER, Proc. Zool. Soc. Lond., 1856, 274 (Orizaba, Vera Cruz), 303 (Orizaba); Synop. Av. Tanagr., 1856, 100; Cat. Am. Birds, 1862, 57 (Orizaba; "Central America"); Cat. Birds Brit. Mus., xi, 1886, 65 (Orizaba; n. Yucatan; Belize, Brit. Honduras; Calderas, Dueñas, Savana Grande, and Retalhuleu, Guatemala).—SCLATER and SALVIN, Ibis, 1859, 16 (Guatemala).—SALVIN and SCLATER, Ibis, 1860, 33 (Dueñas, Guatemala).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (San Juan, Costa Rica); ix, 1869, 200 (Merida, Yucatan); Bull. U. S. Nat. Mus., no. 4, 1876, 18 (Barrio and Tehuantepec, Oaxaca).—FRANTZIUS, Journ. für Orn., 1869, 297 (Costa Rica).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 550 (tierra caliente, Vera Cruz).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 257.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Liberia and Alajuela, Costa Rica).—RICHMOND, Proc. U. S. Nat. Mus., xviii, 1896, 631 (Alta Mira, Tamaulipas).

*Phonasca affinis* CABANIS, Journ. für Orn., 1860, 332 (San José, Costa Rica).

*A[croleptes] affinis* CABANIS, Journ. für Orn., 1861, 91, in text.

[*Euphonia*] *affinis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.

### EUPHONIA MINUTA HUMILIS (Cabanis).

#### WHITE-VENTED EUPHONIA.

*Adult male*.—Forehead (as far backward as middle of eyes, with truncated posterior outline) deep yellow (bright chrome or cadmium); rest of head, with neck and chest, uniform dark violaceous steel blue, with strongly convex or semicircular posterior outline on chest; upper parts (except as described) dark steel blue, sometimes with a slight greenish tinge, the upper back, however, tinged with violet; inner webs of three lateral rectrices with a large subterminal patch of white, that on the outermost occupying approximately one-half the web; inner webs of secondaries with basal half (approximately) white; under parts of body bright chrome or cadmium yellow, paler on sides and flanks, where the feathers have a subterminal spot or bar of dusky (the basal portion grayish) producing a mottled or clouded appearance; lower abdomen, anal region, and under wing coverts white, the last tinged with pale yellow and with central (mostly concealed) spots of dusky grayish; bill blackish terminally, grayish basally, the basal portion of mandible sometimes whitish; iris dark brown;<sup>1</sup> legs and feet

<sup>1</sup> Zeledon, manuscript.



dusky (dark plumbeous in life); length (skins), 89.4-95.8 (91.7); wing, 51.8-55.4 (53.1); tail, 27.4-31 (29.5); exposed culmen, 6.9-7.6 (7.1); depth of bill at base, 3.3-3.6; tarsus, 12.7-13.5 (13); middle toe, 8.6-9.7 (9.1).<sup>1</sup>

*Adult female*.—Above deep yellowish olive-green, becoming more yellowish on forehead, where the feathers show darker central spots; cheeks and chin pale yellowish olive or olive-yellowish; throat pale gray, in strong contrast with yellowish of chin, etc., and the deep olive-yellow or dull gamboge yellow of chest, breast, sides, and flanks (the latter more olivaceous); abdomen white; under tail-coverts pale brownish gray; bill, iris, and feet as in adult male; length (skins), 89.7-93.5 (91.9); wing, 53.1-55.9 (54.1); tail, 28.2-30.5 (29.5); exposed culmen, 6.9-7.4 (7.1); depth of bill at base, 3.6-3.8 (3.8); tarsus, 13.2-13.5 (13.2); middle toe, 9.4-9.7 (9.4).<sup>2</sup>

Guatemala to Isthmus of Panama.

*Phonasca humilis* CABANIS, Journ. für Orn., viii, Sept., 1860, 334 (Costa Rica; coll. Berlin Mus.)

*Acroleptes humilis* CABANIS, Journ. für Orn., 1861, 89 (Costa Rica; crit.).

*Euphonia humilis* LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Costa Rica).—FRANTZUS, Journ. für Orn., 1869, 297 (Costa Rica).—NUTTING, Proc. U. S. Nat. Mus., vi, 1883, 373 (San Juan del Sur, Nicaragua; song).

*Euphonia minuta* (not *Euphonia minuta* Cabanis) SALVIN and SCLATER, Ibis, 1860, 275 (Coban, Guatemala).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 332 (Panama R. R.).—SALVIN, Proc. Zool. Soc. Lond., 1870, 186 (Bugaba, Chiriqui; Calovevora, Veragua).—SCLATER, Ibis, 1873, 373 (Chontales, Nicaragua); Cat. Birds Brit. Mus., xi, 1886, 71, part (Bugaba, Chiriqui; Calovevora, Veragua, Costa Rica; Chontales, Nicaragua; Coban, Vera Paz, Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 258, part (Guatemala; Nicaragua; Costa Rica, Veragua; Panama R. R.).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (San José, Costa Rica).—CHERRIE, Proc. U. S. Nat. Mus., vi, 1889, 111 (Costa Rica; Coban, Veragua, 1883; San Juan del Sur, Nicaragua).

and neck bright violaceous steel blue or glossy violet-black; rest of upper parts dark steel blue, more or less tinged with violet, especially on upper back; remiges and rectrices black edged with steel blue; inner webs of secondaries with more than basal half abruptly white; inner web of outermost rectrix mostly or almost wholly white; second rectrix with more than terminal half of inner web white; third with much less white, sometimes very little; under parts of body, including chest, pure rich lemon or chrome yellow, the lower abdomen somewhat mixed with whitish; under tail-coverts white, the shorter ones, at least, tinged with yellow; bill blackish terminally, grayish or whitish (bluish gray in life?) basally; iris brown; legs and feet dusky in dried skins; length (skins), 96.5–99.1 (97.8); wing, 53.6–56.9 (55.1); tail, 30.7–35.3 (33); exposed culmen, 6.9–7.4 (7.1); depth of bill at base, 4.6–5.1 (4.8); tarsus, 13.5–14.5 (13.7); middle toe, 10.2–10.4.<sup>1</sup>

*Adult female*.—Forehead light olive-green, passing into slate-gray on crown, occiput, and hindneck, the rest of upper parts dull olive-green, brighter on rump and upper tail-coverts and on edges of larger wing-coverts, remiges, and rectrices, the two last mainly dusky; under parts, including throat, pale olive-yellowish, becoming more strongly and purely yellow on flanks; abdomen, anal region and under tail-coverts white; bill, iris, and feet as in adult male; length (skins), 87.6–94 (90.2); wing, 51.6–53.1 (52.3); tail, 29–29.7 (29.5); exposed culmen, 6.6–6.9; depth of bill at base, 4.1–4.3; tarsus, 12.7–13.2 (13); middle toe, 9.9–10.2 (9.9).<sup>2</sup>

Western Mexico, in States of Sonora (Alamos), Sinaloa (Mazatlan; Plomosas), and Colima (Sierra Madre), and Territory of Tepic (San Blas; Rosa Morada).

*Euphonia affinis* (not *Tanagra* (*Euphonia*) *affinis* LESSON) LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 273 (Sierra Madre, Colima; Mazatlan).

*Euphonia godmani* BREWSTER, Descr. Supposed New Birds from W. N. Am. and Mex., Jan., 1889, 90; Auk, vi, Apr., 1889, 90 (Mazatlan, Sinaloa, Mexico; coll. U. S. Nat. Mus.).

## EUPHONIA HIRUNDINACEA Bonaparte.

### BONAPARTE'S EUPHONIA.

*Adult male*.—Forehead and anterior portion of crown (back to about middle of eyes) and entire under parts yellow, deepest on under parts of body, where deep gamboge or indian yellow, paler on forehead, chin, throat, and under tail-coverts, where more lemon yellow; posterior portion of crown, occiput, hindneck, auricular, suborbital, and malar regions, back, scapulars, smaller wing-coverts, rump, and upper tail-coverts plain dark steel blue, more or less tinged with or inclining to violet on head and neck; remiges and rectrices black, with steel blue edgings; inner webs of secondaries abruptly white for more than basal

<sup>1</sup> Four specimens.

<sup>2</sup> Three specimens.

half; inner web of outermost rectrix with more than terminal half white, that of the second with about (or a little less than) terminal half white; maxilla black, becoming grayish beneath nostrils; mandible grayish (bluish gray in life<sup>1</sup>) with blackish tip; iris brown; legs and feet dusky (plumbeous in life<sup>1</sup>); length (skins), 87.6-108.7 (102.1); wing, 55.6-64.8 (60.07); tail, 31-39.9 (35.3); exposed culmen, 7.1-8.9 (8.6); depth of bill at base, 5.1-5.6 (5.3); tarsus, 14.2-15.7 (15); middle toe, 10.4-11.9 (11.2).<sup>2</sup>

*Adult female*.—Above plain olive-green faintly glossed with metallic greenish, the forehead, rump, and upper tail-coverts slightly more yellowish olive-green; inner web of outermost rectrix with a terminal spot of white; lores pale grayish, margined above by an indistinct dusky line; suborbital and auricular regions olive-green, passing into more yellowish olive-green on anterior portion of malar region, the chin light yellowish olive-green or olive-yellowish; throat and median portion of chest and breast very pale gray or grayish white, passing into purer white on abdomen, the chest usually more tinged with gray; postauricular and postmalar region deeper gray; sides of breast, sides, and flanks bright yellowish olive-green, strongly contrasted with whitish of median under parts; under tail-coverts pale olive-yellowish; bill, etc., as in adult male; length (skins), 89.7-109.2 (97.8); wing, 55.1-60.5 (57.7); tail, 29.7-35.3 (32.3); exposed culmen, 7.1-8.9 (7.9); depth of bill at base, 5.1-5.3; tarsus, 14.2-15.2 (14.7); middle toe, 10.4-11.9 (11.2).<sup>3</sup>

*Young male, first plumage*.—Similar to adult female, but plumage of looser texture, and olive-green of upper parts without gloss.

<sup>1</sup> Zeledon, manuscript.

<sup>2</sup> Sixteen specimens.

(Immature males first assume yellow feathers on the throat and median under parts, the whole under surface becoming yellow before the black begins to appear. This is first seen on the head, which becomes exactly as in the adult male before the color of the back, wings, etc., changes from olive-green.)

Southeastern Mexico, in States of Tamaulipas (Tampico; Alta Mira), Vera Cruz (Cordova; Jalapa; Orizaba), Puebla (Rinconada), Oaxaca (Playa Vicente; Guichicovi), and Yucatan (Chichen-Itza), and southward to Costa Rica (San José; Naranjo de Cartago; San Juan; Turrialba, etc.); Chiriqui?; Veragua?.

*Euphonia hirundinacea* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 117 (Guatemala;=immature male); Nuov. Ann. Sc. Nat. Bologna, ii, 1839, 345 (Mexico); Consp. Av., i, 1850, 232.—SCLATER, Proc. Zool. Soc. Lond., 1854, 98, pl. 65, fig. 1 (Guatemala; Chiriqui; Veragua; Colombia?); 1856, 278 (monogr.), 303 (Guatemala; Cordova, Vera Cruz); 1859, 364 (Jalapa, Vera Cruz), 378 (Playa Vicente, Oaxaca); Tanagr. Cat. Spec., 1854, 14, 16; Synop. Av. Tanagr., 1856, 104; Cat. Am. Birds, 1862, 59 (Coban, Vera Paz, Guatemala; Mexico; "New Granada"); Cat. Birds Brit. Mus., xi, 1886, 75 (Orizaba, Vera Cruz; n. Yucatan; Corosal and Belize, Brit. Honduras; pine ridge of Poctun and Choctum, Vera Paz, Guatemala; San Pedro, Honduras; Costa Rica).—SCLATER and SALVIN, Ibis, 1859, 16 (Guatemala); Proc. Zool. Soc. Lond., 1870, 836 (San Pedro, Honduras).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 172 (Turrialba, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Turrialba and San Juan, Costa Rica); Bull. U. S. Nat. Mus., no. 4, 1876, 18 (Guichicovi, Oaxaca).—FRANTZIUS, Journ. für Orn., 1869, 297 (Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 550 (tierra caliente, Vera Cruz).—BOUCARD, Proc. Zool. Soc. Lond., 1883, 443 (Yucatan).—SALVIN, Cat. Strickland Coll., 1882, 180 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am. Aves, i, 1883, 261 (Coban, Cajabon, etc., Guatemala; Hato Viejo, Nicaragua, etc.).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (San José, Naranjo de Cartago, and Monte Redondo de San José, Costa Rica).—CHERRIE, Auk, ix, 1892, 24 (San José, etc., Costa Rica; descr. nest and eggs).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 488 (Rio Escondido, Nicaragua); xviii, 1896, 631 (Alta Mira, Tamaulipas).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 297 (Chichen-Itza, Yucatan; song).—LANTZ, Trans. Kansas Acad. Sci., 1896-97 (1899), 223 (Rinconada, Puebla).

*E[uphonia] hirundinacea* GRAY, Gen. Birds, ii, 1849, 367.

[*Euphonia*] *hirundinacea* GRAY, Hand-list, ii, 1870, 78, no. 7145.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 18.

*Phonasca hirundinacea* CABANIS, Journ. für Orn., 1860, 334 (Costa Rica).

*Euphonia lunirostris* (not of Lafresnaye and D'Orbigny) SCLATER, Jardine's Contr. Orn., 1851, 86, part (Chiriqui).

(?) *Phonasca gnatho* CABANIS, Journ. für Orn., Sept., 1860, 335 (Costa Rica; coll. Berlin Mus.); 1861, 90.

(?) *Euphonia gnatho* LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 297 (Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am. Aves, i, 1883, 262 (Tempate, Gulf of Nicoya, Costa Rica).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 76 (Tempate and Turrialba, Costa Rica).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Costa Rica).

(?) [*Euphonia*] *gnatho* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 18.

## EUPHONIA CRASSIROSTRIS Sclater.

## THICK-BILLED EUPHONIA.

Similar to *E. hirundinacea*, but adult male with yellow of forehead extending much farther backward (over anterior half of crown) and with rounded instead of truncate posterior outline, and adult female entirely yellow beneath.

*Adult male*.—Forehead and anterior half of crown lemon yellow, this extending much behind eyes, and with a strongly convex or rounded posterior outline; entire under parts rich yellow (deep gamboge or indian yellow), becoming paler (lemon or canary yellow) on under tail-coverts; head (except as described) and upper parts dark steel blue, usually more or less tinged with or inclining to violet anteriorly; remiges and rectrices black with steel blue or greenish steel blue edgings; inner webs of secondaries abruptly white for more than basal half; inner web of two lateral rectrices with a large sub-terminal patch of white, larger on the outermost; maxilla black, becoming grayish beneath nostrils; mandible grayish (bluish gray in life?) on basal half or more, blackish terminally; iris brown; legs and feet horn color or dusky (bluish gray in life?); length (skins), 99.1–111.8 (103.6); wing, 60.2–64.8 (62.2); tail, 33.5–38.6 (35.3); exposed culmen, 7.9–10.2 (9.1); depth of bill at base, 5.3–6.6 (5.8); tarsus, 14.7–16 (15.2); middle toe, 9.9–11.9 (10.7).<sup>1</sup>

*Adult female*.—Above plain yellowish olive-green; beneath olivaceous yellow, purer yellow medially, more olive-greenish laterally; length (skins), 3.90–4.10 (4.03); wing, 59.7–63.5 (61.2); tail, 33–38.1 (35.1); exposed culmen, 8.4–8.9 (8.6); tarsus, 15–15.5 (15.2); middle toe, 10.7–12.2 (11.4).<sup>2</sup>

(Corte Rica, Ameristura; Cartago) and southward through Colombia

*Euphonia lanirostris* SALVIN and GODMAN, Ibis, 1879, 119 (Atanques, prov. Santa Marta, Colombia, alt. 2,700 ft.; crit.); 1880, 119 (Atanques); Biol. Centr.-Am., Aves, i, 1883, 262, part (Angostura, Costa Rica; Volcan de Chiriqui, Bugaba, and David, Chiriqui; Boquete de Chitra, Calovevora, and Cordillera de Tolé, Veragua; Lion Hill and Paraiso Station, Panama R. R.; Colombia; Ecuador; Peru?).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 76, part, excl. syn. part (Costa Rican and Colombian localities and references).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Costa Rica).

*Ph[onasca] lanirostris* CABANIS, Journ. für Orn., 1860, 331; 1861, 90.

*Euphonia crassirostris* SCLATER, Proc. Zool. Soc. Lond., 1856, 277 (Santa Marta, Colombia; coll. P. L. Sclater); 1859, 19 (Bogota, Colombia); (?) 1860, 275 (Babahoyo, w. Ecuador); Synop. Av., Tanagr., 1856, 103; Cat. Am. Birds, 1862, 58, part (Bogota; Babahoyo?; Caracas, Venezuela?).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 349 (Lion Hill, Panama R. R.); Proc. Zool. Soc. Lond., 1867, 138 (David, Chiriqui); 1870, 186 (Chitra, Boquete de Chitra, and Calovevora, Veragua).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Cartago, Costa Rica).—BERLEPSCH, Journ. für Orn., 1884, 289 (Bucaramanga, Colombia).—ROBINSON, Flying Trip to Tropics, 1891, 161 (Magdalena R., Colombia).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 141 (Santa Marta, Colombia), 179 (Palomina, prov. Santa Marta); Proc. New Engl. Zool. Club, ii, 1900, 28 (Loma del Leon, Panama R. R.; crit.).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 170 (Bonda, etc., prov. Santa Marta; crit.).

*Euphonia crassirostris?* LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 175 (David, Chiriqui; crit.).

*E[uphonia] crassirostris* ALLEN, Bull. Am. Mus. N. H., ii, 1889, 91 (Bogota; crit.); iii, 1891, 351 (crit.).

*Euphonia hirundinacea* (not of Bonaparte) LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 298 (Lion Hill, Panama R. R.).

*Euphonia* sp.? SALVIN, Proc. Zool. Soc. Lond., 1867, 138 (Cordillera de Tolé, Veragua).

#### EUPHONIA GOULDI Sclater.

##### GOULD'S EUPHONIA.

*Adult male*.—Forehead (sometimes forepart of crown also) yellow, the feathers with partially exposed central triangular spots of dusky; rest of upper parts plain olive-green, the feathers with broad metallic margins, producing a strong metallic sheen to the plumage; remiges and rectrices dusky with olive-green or yellowish olive-green edgings; lores dusky, becoming black along upper margin next to yellow of forehead; sides of head (except lores) and neck, chin, throat, and chest plain yellowish olive-green, without metallic gloss; sides and flanks olive-green, the feathers with broad margins of yellow; median portion of breast, abdomen, anal region, and under tail-coverts uniform deep tawny; maxilla black, mandible bluish gray with dusky tip; legs and feet dusky horn color (in dried skins); length (skins), 86.4–102.9 (92.7); wing, 50.8–57.9 (55.1); tail, 25.1–31.5 (29.5); exposed culmen, 8.1–9.4 (8.4); depth of bill at base, 5.3–5.6 (5.5); tarsus, 14.7–15.7 (15.2); middle toe, 9.7–11.7 (10.7).<sup>1</sup>

*Adult female*.—Forehead dark rusty or chestnut, the feathers with darker central spots, partly exposed; rest of upper parts plain olive-

<sup>1</sup> Fourteen specimens.

green, the feathers with broad semimetallic margins, producing a distinct metallic gloss or sheen to the plumage; remiges and rectrices dusky with olive-green edgings, narrower and more yellowish on primaries; under parts deep olive-yellowish, darker (more yellowish olive-green) on sides and flanks; under tail-coverts deep ochraceous or tawny; bill and feet as in adult male; length (skins), 83.8-99.1 (95); wing, 49.5-58.7 (54.6); tail, 22.4-32 (28.2); exposed culmen, 7.9-8.6 (8.4); depth of bill at base, 4.8-5.8 (5.3); tarsus, 14.7-15.7 (15.2); middle toe, 9.9-11.7 (10.9).'

Southern Mexico, in States of Vera Cruz (Santecomapan), Oaxaca, etc., and southward to Costa Rica (Angostura; Valza; Tucurriqui; San Carlos; Jiménez; Pacuare; Dota Mts.).

*Euphonia* ——— ? SCLATER, Proc. Zool. Soc. Lond., 1856, 303 (Mexico).

*Euphonia gouldi* SCLATER, Proc. Zool. Soc. Lond., xxv, 1857, 66, pl. 124 (Guatemala; coll. J. Gould), 229 (Santecomapan, Vera Cruz; Mosquito coast, Nicaragua); Ann. and Mag. N. H., 2d ser., xx, 1857, 319; Journ. für Orn., vi, 1858, 73; Cat. Am. Birds, ii, 1862, 60 (Choctum, Vera Paz, Guatemala); Cat. Birds Brit. Mus., xi, 1866, 81 (Choctum and Kamkhal, Guatemala; Belize, Brit. Honduras; Chontales, Nicaragua; Angostura and Valza, Costa Rica).—SCLATER and SALVIN, Ibis, 1859, 17 (Guatemala).—SALVIN, Ibis, 1860, 194 (Coban, Guatemala); 1872, 315 (Chontales, Nicaragua).—FRANTZIK, Journ. für Orn., 1860, 298 (Tucurriqui, etc., Costa Rica).—BOCCARD, Proc. Zool. Soc. Lond., 1878, 54 (San Carlos, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 263.—RIDGWAY, Proc. U. S. Nat. Mus., x, 1887, 585 (Segovia R., Honduras).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Jiménez, Costa Rica).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 488 (Greytown and Rio Escondido, Nicaragua).

[*Euphonia*] *gouldi* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 18.

*Euphonia gouldii* LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 96 (Angostura, Pacuare, and Dota Mts., Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 550 (hot region, Vera Cruz).

## Genus PYRRHUPHONIA Bonaparte.

*Pyrrhuphonia* BONAPARTE, Compt. Rend., xxxi, 1850, 423; Rev. Zool., iii, 1851, 137. (Type, *Fringilla jamaica* Linnæus.)

Similar to *Euphonia* but bill much stouter, its depth at base equal to its width at rictus and greater than distance from nostril to tip of maxilla; gonys very strongly ascending terminally, its basal angle very prominent; maxillary tomium with subterminal notch indistinct<sup>1</sup> and without smaller notches or serrations posterior to the notch.

*Coloration*.—Uniform, slightly metallic, greenish gray above, paler gray beneath, becoming yellowish on abdomen.

*Range*.—Island of Jamaica, Greater Antilles. (Monotypic.)

## PYRRHUPHONIA JAMAICA (Linnæus).

## JAMAICAN EUPHONIA.

*Adult male*.—Above uniform greenish plumbeous, with a strong gloss of metallic bluish green; remiges dusky, with greenish plumbeous edgings, broadest on tertials; beneath much paler gray, without greenish tinge or metallic gloss; abdomen light yellow (canary yellow or pale lemon yellow); anal region and under tail-coverts pale cream-buff, the latter with central or median portion duller, sometimes pale gray; axillars pale yellow (primrose or pale sulphur); under wing-coverts white; maxilla black with portion below nostril bluish gray (grayish blue in life?); mandible bluish gray for basal half or more, blackish terminally; legs and feet horn color (in dried skins); length (skins), 101.6–114.3 (105.9); wing, 66–66.5 (66.3); tail, 39.4–40.1 (39.6); exposed culmen, 8.9–9.7 (9.1); tarsus, 17.5–17.8 (17.7); middle toe, 10.9–12.7 (12.2).<sup>2</sup>

*Adult female*.—Pileum and hindneck greenish gray, with a slight metallic gloss; rest of upper parts plain olive-green, slightly more yellowish posteriorly; under parts pale gray, paler and duller medially; abdomen buffy whitish; otherwise like the male; length (skins), 101.6–113 (107.2); wing, 64.8–66 (65.3); tail, 38.6; exposed culmen, 8.9–9.4 (9.1); depth of bill at base, 7.1; tarsus, 17.8; middle toe, 12.2–12.7 (12.4).<sup>3</sup>

Island of Jamaica, Greater Antilles.

[*Fringilla*] *jamaica* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 323 (Jamaica; based on *Grey Grosbeak* Brown, Illustr., 62, pl. 26).—GMELIN, Syst. Nat., i, pt. ii, 1788, 920.—LATHAM, Index Orn., i, 1790, 443.

*Euphonia jamaica* GOSSE, Birds Jamaica, 1847, 238; Illustr. Birds Jam., 1849, pl. 59.—SCLATER, Proc. Zool. Soc. Lond., 1861, 73; Cat. Am. Birds, 1862, 60.—ALBRECHT, Journ. für Orn., 1862, 196.—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 296.—CORY, Auk, iii, 1886, 194 (synonymy and descr.); Birds W. I., 1889, 81.—SCOTT, Auk, x, 1893, 180.

<sup>1</sup>The notch is by no means wanting, as stated on page 53 of the Catalogue of the Birds in the British Museum, vol. xi.

<sup>2</sup>Three specimens.

<sup>3</sup>Two specimens.



- [*Euphonia*] *jamaica* BONAPARTE, *Consp. Av.*, i, 1850, 233.  
 [*Euphonia*] *jamaica* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 18.  
*E[uphonia] jamaica* NEWTON (A. and E.), *Handb. Jamaica*, 1881, 104.  
*Euphonia jamaica* SCLATER, *Jardine's Contr. Orn.*, 1851, 91.  
*Euphonia jamaicensis* SCLATER, *Proc. Zool. Soc. Lond.*, 1856, 280 (monogr.); *Synop. Av. Tanagr.*, 1856, 106.  
*[Euphonia] jamaicensis* CORY, *List Birds W. I.*, 1885, 11.  
*Pyrrhuphonia jamaica* BONAPARTE, *Rev. Zool.*, iii, Mar., 1851, 137.—SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 85 (Moneague, Metcalf Parish, and St. Ann's, Jamaica).—CORY, *Cat. W. I. Birds*, 1892, 16, 113, 130.  
*Euphonia cinerea* LAFRENNAYE, *Rev. Zool.*, ix., Aug., 1846, 277 ("Columbia").—SCLATER, *Jardine's Contr. Orn.*, 1851, 91.  
*E[uphonia] cinerea* GRAY, *Gen. Birds*, iii, App., 1849, 17.  
*[Euphonia] cinerea* BONAPARTE, *Consp. Av.*, i, 1850, 235.

#### Genus BUTHRAUPIS Cabanis.

*Buthraupis* CABANIS, *Mus. Hein.*, i, 1850, 29. (Type, *Tanagra cucullata* Jardine.)

Large, short-billed, Tanagers, with the plumage chiefly blue and yellow, wing rather long and pointed, and tail much shorter than wing, even, or very slightly rounded.

Bill short (length of maxilla from nostril not more—usually much less—than half the length of the tarsus), stout (both depth and width at base equal to or exceeding gonyx), usually deeper than broad, rapidly tapering to the distinctly uncinate tip; culmen gently convex, its terminal portion sometimes more strongly curved and produced into a distinct uncinate point, with a distinct tomial notch behind it; gonyx about equal to length of maxilla from nostril (or sometimes a little shorter), gently convex, strongly ascending, contracted and strongly ridged terminally; commissure nearly straight or (usually) slightly sinuated. Nostril exposed, nearly circular, occupying most of anterior end of

There is great difference in the form of the bill between *B. cucullata*, *B. montana*, *B. arcei* (and its close ally *B. carolinigularis*) on the one hand and *B. chloronota* and *B. crinia* on the other, the two last named having this member much shorter and proportionally deeper at the base, the extreme abbreviation existing in *B. crinia*. In the last named species the gonys is sharply ridged, and there is a very slight development of the uncinate tip to the maxilla, which in *B. chloronota* is quite as well developed as in *B. cucullata*, the gonys at the same time lacking the well defined ridge of *B. crinia*. On the other hand *B. arcei* and *B. carolinigularis*, with even a more slender bill than *B. cucullata*, have the tip of the maxilla even less uncinate than *B. crinia*. It will be seen, therefore, that the genus can not be subdivided on the shape of the bill alone without making four groups, the first to include *B. cucullata* and *B. montana*, the second *B. arcei* and *B. carolinigularis*, the third *B. chloronota*, and the fourth *B. crinia*.

The first-mentioned of these groups is further characterized by having the plumage of the upper parts (the head excepted) remarkably glossy. The others have the upper plumage normal in this respect, except that represented by *B. crinia*, which has the pileum glossy and the rump partially so. The group containing *B. arcei* and *B. carolinigularis* (*B. edwardsi* also?) has the tail very much shorter in proportion to the wing than the others.

It may eventually prove necessary to separate one or more of these groups on account of the characters mentioned, but for the present I prefer to leave the genus with usually assigned limits.

#### BUTHRAUPIS ARCEI Sclater and Salvin.

##### ARCE'S TANAGER.

*Adult male.* Above dull grayish indigo blue, the wings and tail blackish with dull indigo blue edgings; lores, chin, and throat dull blackish, tinged with dull indigo bluish; rest of under parts rich yellow (safron or indian yellow on chest, gradually fading to lemon yellow on under tail-coverts), the sides and flanks mottled or clouded with dusky; under wing-coverts pale yellow, with concealed dusky areas on outer webs; bill blackish; legs and feet horn brownish; length (skin), 147.3; wing, 85.6; tail, 72.6; exposed culmen, 15.2; depth of bill at base, 8.6; tarsus, 22.4; middle toe, 16.

Veragua (Cordillera del Chucu; Calobre).

*Imagines.* *arcei* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1869, 439, pl. 31 (Cordillera del Chucu, Veragua) (cf. Salvin and Godman). SALVIN, Proc. Zool. Soc. Lond., 1870, 187 (Cordillera del Chucu). SALVIN and GOODMAN, Bol. Cent. Am., Avon, 1, 1883, 276 (Cordillera del Chucu and Calobre, Veragua). SCLATER, Cat. Birds Brit. Mus., x, 1886, 149.

[*Buthraupis*] *arcei* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 20.

The total length is actually much greater, the skin being greatly shortened.

## BUTHRAUPIS CÆRULEIGULARIS Cherrie.

## CHERRIE'S TANAGER.

Similar to *B. arcæi*, but larger; sides and flanks extensively and uniformly dusky bluish; chin and throat dull indigo blue, scarcely darker than pileum, and under wing-coverts light yellow without concealed dusky spots.

*Adult male.* Head (all round), hindneck, sides of neck, entire upper parts, sides, and flanks, uniform dull indigo blue, the larger wing-coverts, remiges, and rectrices, however, dull black, except on edges; chest and breast (except laterally), belly, anal region, and under tail-coverts bright yellow, changing gradually from rich indian yellow on the chest to lemon yellow on the under tail-coverts; axillars canary yellow; under wing-coverts mixed primrose yellow and white; inner webs of remiges dull brownish gray, paler on edges, these becoming whitish toward base; thighs uniform dusky indigo blue; bill entirely black; legs dusky horn color; feet dull blackish; length (skin), about 142.2 (tail imperfect); wing, 86.9; exposed culmen, 15.2; depth of bill at base, 8.9; tarsus, 21.6; middle toe, 15.2.

Although apparently very different from *B. arcæi* in the extensively and uniformly dusky sides and flanks, this form is so closely similar in other features of coloration that possibly it may only represent an extreme variation of that species. At any rate, additional specimens will be necessary to establish its validity.

Central Costa Rica (Buena Vista).

*Buthraupis cæruleigularis* CHERRIE, Proc. U. S. Nat. Mus., xvi, no. 956, Oct. 28, 1900.



*Chalcothraupis* BONAPARTE, Rev. et Mag. de Zool., iii, Mar., 1851, 144. (Type, *Tanagra* (*Aglaia*) *labradorides* Lafresnaye.)

*Euschemon* SCLATER, Jardine's Contr. Orn., 1851, 95. (Type, *Tanagra flava* Gmelin.)

*Euprepiste* SCLATER, Jardine's Contr. Orn., 1851, 95. (Type, *Tanagra brasiliensis* Linnæus.)

Small, very brilliantly colored Tanagers with the bill shorter than middle toe without claw, the tarsus decidedly longer than middle toe with claw and more than one-third as long as tail; if not brilliantly colored in adult plumage, the lesser wing-coverts glossy bright blue.

Bill small (exposed culmen about half as long as tarsus, sometimes a little more or less), varying from rather stout, with decidedly curved culmen and basal depth equal to basal width (equal also to length of gonys), to rather slender, with culmen nearly straight and basal depth much less than basal width or than length of gonys; commissure nearly straight, the maxillary tomium more or less distinctly notched near tip; gonys nearly (sometimes quite) equal to length of maxilla from nostril, slightly convex, and decidedly ascending terminally, the tip of the mandible acute. Nostril partly (sometimes almost entirely) concealed by frontal plumules—rarely fully exposed—nearly circular, in lower anterior portion of nasal fossæ. Rictal bristles minute, often obsolete. Wing long (about three and one-third to four and one-fourth times as long as tarsus), pointed (ninth to sixth or eighth to sixth primaries longest, the ninth usually longer, rarely shorter, than fifth); primaries exceeding secondaries by nearly (sometimes quite) the length of the tarsus. Tail shorter than wing by length of tarsus or (usually) more, usually more or less emarginate, sometimes even, the rectrices rather narrow, with firm webs and rounded tips. Tarsus decidedly (sometimes very much) longer than middle toe with claw; lateral claws reaching about to base of middle claw or slightly beyond; hind claw decidedly shorter than its digit.

*Coloration*.—Usually extremely brilliant and varied, in many cases beyond any other known birds, thus fully entitling the genus to the name by which it has usually been known (*Calliste*, i. e., most beautiful), but which unfortunately can not be retained. Only one of the sixty-odd species is plainly attired, this (well named *C. inornata*) being plain gray (paler below), with lesser wing-coverts bright glossy blue. The sexes are usually alike in color, or nearly so, but the young are quite different, being very plain, never streaked.

*Range*.—Tropical America, from southern Mexico to southern Brazil and Peru. Wanting from the West Indies, except in St. Vincent and Grenada.

Although very marked variations in the shape of the bill and in other details of external structure occur among the numerous species of this genus, I am unable to subdivide it into groups with definite

characters. The species may be conveniently assorted according to their style of coloration, as has been done by Dr. Sclater, though I would give some of his groups different limits. For example, *C. florida*, which both he and Messrs. Salvin and Godman consider most nearly allied with *C. schranki* and place in the same subdivision (true *Calliste*), seems to me to be a typical "*Chrysothraupis*," having exactly the same pattern of coloration as *C. aurulenta*, *C. pulchra*, etc., but with their brilliant orange and yellow replaced by glossy green.

## KEY TO THE SPECIES AND SUBSPECIES OF CALOSPIZA.

- a. Back streaked with black or dusky.
  - b. Under parts green or yellowish, without streaks or spots.
    - c. General color yellow, the throat pale silvery buff or grayish. (Costa Rica to Ecuador.) ..... *Calospiza heterocephala* (p. 37)
    - cc. General color green, including throat; a large black auricular patch. (*Calospiza florida*.)
      - d. Larger (wing of adult male 68.1, tail 43.7); general color purer green; adult male with a large occipital patch of pure yellow. (Costa Rica.)  
*Calospiza florida florida* (p. 39)
      - dd. Smaller (wing of adult male 64.5-66.5, tail 40.1-41.1); general color more yellowish green; adult male without distinct, if any, occipital patch of yellow. (Veragua.) ..... *Calospiza florida aremi* (p. 40)
  - bb. Under parts white or pale greenish blue, spotted with black anteriorly.
    - c. Smaller (wing of adult male 68.6); lesser wing-coverts green, with central spots of black; pileum green, the feathers with central spots of black. (Costa Rica to Ecuador, etc.) ..... *Calospiza guttata chrysophrys* (p. 40)
    - cc. Larger (wing of adult male 86.4); lesser wing-coverts plain blue; pileum black, the feathers margined with blue. (West coast of Guatemala.)  
*Calospiza cabanisi* (p. 42)
- aa. Back without streaks.
  - b. Back bright green.

*dd.* Head not black; under parts of body not light cinnamon; back not greenish black nor dusky.

*e.* Head changing from golden buff to silvery yellowish green, the forehead and cheeks blue, the lores and chin black; back deep black; rump bright blue; chest and sides of breast black. (*Calospiza larvata*, adults.)

*f.* Deeper colored (sides bright ultramarine, becoming bright cerulean or turquoise blue on flanks, the throat cinnamon-rufous); greater wing-coverts, remiges and rectrices more broadly edged with greenish; slightly larger. (Southern Mexico to northern Honduras.)

*Calospiza larvata larvata*, adults (p. 47)

*ff.* Lighter colored (sides cerulean blue, becoming pale greenish blue or bluish green on flanks, the throat orange-buffy or ochraceous); greater wing-coverts, remiges and rectrices more narrowly edged with greenish (the edgings sometimes wanting on greater wing-coverts); slightly smaller. (Southern Honduras to Isthmus of Panama.)

*Calospiza larvata fanny*, adults (p. 49)

*ee.* Head grayish green, becoming whitish on throat; back dull or grayish green, clouded with blackish or dusky laterally; rump dull green; sides of chest and breast grayish or dusky.

*Calospiza larvata larvata*, young (p. 48)

*Calospiza larvata fanny*, young (p. 49)

*cc.* Back neither black, dusky, nor dull green; rump neither blue nor green.

*d.* Pileum, back, scapulars, and rump plain slate-gray; under parts pale gray, becoming whitish on abdomen; lesser wing-coverts bright blue. (Veragua to central Colombia.) ..... *Calospiza inornata*, adults (p. 51)

*dd.* Pileum rufous-tawny to very dark chestnut; back, scapulars, and rump opalescent, dull greenish or buffy; under parts dull buffy or greenish, more or less opalescent; lesser wing-coverts dull greenish or bluish green.

*e.* Smaller (wing 70.4–75.2); coloration darker, the pileum dark chestnut. (Island of Grenada, Lesser Antilles; Venezuela.)

*Calospiza cucullata*, adults (p. 52)

*ee.* Larger (wing 75.7–78.7); coloration lighter, the pileum light chestnut to rufous-tawny. (Island of St. Vincent, Lesser Antilles.)

*Calospiza versicolor*, adults (p. 53)

### CALOSPIZA ICTEROCEPHALA (Bonaparte).

#### SILVER-THROATED TANAGER.

*Adult male.*—Pileum, nape, sides of head, and whole rump plain glossy deep saffron or indian yellow; back and scapulars similar but rather paler yellow (sometimes slightly tinged with greenish), broadly streaked with black; wings and tail black, the lesser and middle wing-coverts broadly tipped with yellow or greenish yellow, the greater coverts, remiges, and rectrices edged with yellowish green; chin, throat, and malar region and rather indistinct collar across hind-neck pale buffy greenish or greenish buffy, more or less changeable with different inclinations to the light; under part of body and under tail-coverts plain saffron or indian yellow, slightly tinged with olive-greenish laterally; anterior portion of lores and a streak from rictus along lower edge of suborbital and malar regions (widening more or

less at posterior extremity) black; bill black; iris brown; legs and feet horn color (in dried skins); length (skins), 109.2-137.2 (124.2); wing, 69.6-80 (74.7); tail, 44.7-53.1 (49.3); exposed culmen, 9.4-10.7 (9.9); depth of bill at base, 5.1-5.6 (5.3); tarsus, 17-19.1 (17.8); middle toe, 11.4-12.7 (12.2).<sup>1</sup>

*Adult female*.—Similar in color to the adult male and not always distinguishable, but usually more or less duller in color; length (skins), 127-132.1 (129.5); wing, 70.1-78.2 (72.6); tail, 43.9-53.1 (47.2); exposed culmen, 9.9-10.2 (10); depth of bill at base, 5.1-5.8 (5.3); tarsus, 17.3-18 (17.8); middle toe, 11.9-12.2.<sup>2</sup>

*Young male*.—Much duller in coloration than the dullest adult females; above olive-green, slightly tinged with yellow on sides of head, more decidedly yellowish on rump; feathers of pileum with small triangular or sagittate central spots of blackish, the interscapulars and scapulars with large dusky markings of similar position and shape; wings and tail blackish with yellowish green edgings; malar region, chin, and throat dull greenish buffy; rest of under parts buffy yellow (naples or maize), medially more yellowish, more olive-greenish laterally.

*Young female*.—Similar to the young male but still duller in color.

Costa Rica (San José; Dota; Turrialba; Barranca; Candelaria Mta.; Naranjo; Oroquí; Cartago; San Marco, etc.), southward through Colombia to Ecuador (Punta Playa, near Quito; Nanegal; Pasto; Napo; Bois de Bagnos; Tongaragua, etc.).

<sup>1</sup> *Calliste icterocephala* BONAPARTE, Compt. Rend., xxxii, 1851, 76 (Punta Playa, near Quito, Ecuador).—SCLATER, Jardine's Contr. Orn., 1851, 53, pl. 70, fig. 1; Proc. Zool. Soc. Lond., 1856, 19, 251 (monogr.; Punta Playa, Ecuador); 1860-87, Nanegal w Ecuador. Synop. Av. Tanager. 1856-77, Monogr. Cal.

- Lyc. N. Y., ix, 1868, 98 (Dota, Turrialba, Barranca, and San José, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 298 (Candelaria Mts., etc., Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 498 (Antioquia, Colombia).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Naranjo and Orosí, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 269 (Vivalva, Calobre, etc., Veragua; etc.).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Cartago, Naranjo de Cartago, and Santa Maria de Dota).—CHERRIE, Anal. Inst. Fís.-Geogr. Nac. Costa Rica, vi, 1893, 13 (San Marco).  
 [*Calliste*] *icterocephala* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.  
*Chrysothraupis icterocephala* BONAPARTE, Rev. et Mag. de Zool., iii, March, 1851, 129 (Bois de Bagnos, Tonguaragua, Ecuador), 445; Note sur les Tang., 1851, 17.  
*Callispiza icterocephala* SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 175 (Costa Rica).  
*Callispiza* (*Chrysothraupis*) *frantzii* CABANIS, Journ. für Orn., ix, March, 1861, 87 (Costa Rica; coll. Berlin Mus.).  
*Calliste frantzii* SCLATER, Ibis, 1863, 451 (Costa Rica); 1868, 72, in text (Costa Rica; crit.).

**CALOSPIZA FLORIDA FLORIDA (Sclater and Salvin).**

**EMERALD TANAGER.**

*Adult male*.—General color above pure yellowish green (nearly apple green), the back and scapulars broadly streaked with black; lower anterior portion of lores and a large quadrate oblique patch across auricular region black; entire occiput pure lemon yellow; rump plain bright greenish yellow, more decidedly yellow below; lesser wing-coverts bright yellowish green with black (mostly concealed) bases; rest of wings black, the middle coverts broadly tipped with bright yellowish green, the greater coverts broadly and secondaries more narrowly edged with the same; tail black with narrow green edgings to middle rectrices; under parts plain light green (duller and less yellowish than upper parts), the abdomen, anal region, and under tail-coverts light maize or naples yellow; bill black; legs and feet (in dried skin) horn color; length (skin), 130.8; wing, 68.1; tail, 43.7; exposed culmen, 10.1; depth of bill at base, 4.8; tarsus, 16; middle toe, 10.7.<sup>1</sup>

*Adult female*.—Similar to the male, but rather duller in color and without the yellow occipital patch.

Costa Rica (Carrillos, on Rio Sucio).

- Calliste florida* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1869, 416, pl. 28 (Costa Rica; coll. Salvin and Godman).—SALVIN, Ibis, 1870, 114 (Costa Rica).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 103, part (Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 267, part, pl. 17, fig. 1 (Costa Rica).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Costa Rica).

[*Calliste*] *florida* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.

*Calospiza florida florida* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr., 1901, 149, in text.

<sup>1</sup>One specimen, no. 108276, U. S. Nat. Mus., from Rio Sucio (Carrillos), 1884; M. Carranza.



## CALLISTE FLORIDA ARCAEI Ridgway.

## ARCE'S EMERALD Tanager.

Similar to *C. f. florida*, but smaller, with larger feet; adult male without a distinct occipital patch of yellow (sometimes with none), and feathers of pileum marked with a distinct central V-shaped spot of black or black beneath the surface (partly exposed), and with the general green color of upper parts slightly more yellowish; adult female slightly duller and less yellowish green than the male, with pileum and rump less yellowish.

*Adult male*.—Length (skins), 101.6–104.1 (102.9); wing, 64.5–66.5 (65.5); tail, 40.1–41.1 (40.6); exposed culmen, 8.1–9.7 (8.9); depth of bill at base (one specimen), 5.1; tarsus, 17.3–17.5; middle toe, 10.9–11.4 (11.2).<sup>1</sup>

*Adult female*.—Length (skins), 104.6–106.7 (105.7); wing, 61–63.5 (62.2); tail, 36.8–39.4 (38.1); exposed culmen, 9.7–10.2 (9.9); tarsus, 17.3–17.5; middle toe, 11.2–12.4 (11.7).<sup>1</sup>

## Veragua.

*Calliste florida* (not of Sclater and Salvin) SCLATER, Ibis, 1876, 409 (Veragua); Cat. Birds Brit. Mus., xi, 1886, 103, part (Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 267, part (Veragua).

*Calospiza florida arcaei* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 149 (Veragua; coll. U. S. Nat. Mus.).

## CALOSPIZA GUTTATA CHRYSOPHRYS (Sclater)?

## YELLOW-BROWED TANAGER.

*Adult male*.—Upper parts bright yellowish green, becoming more



under tail-coverts, the latter with central wedge-shaped or sagittate spots (mostly concealed) of dusky; flanks plain yellowish green, tinged with yellow; maxilla blackish, mandible grayish or horn color with dusky tip; legs and feet horn color or dusky in dried skins; length (skins), 119.4–142.2 (130.8); wing, 68.6–70.6 (69.6); tail, 52.1; exposed culmen, 10.2–10.4; depth of bill at base, 5.1–5.3; tarsus, 18–18.5 (18.3); middle toe, 11.4–12.2 (11.7).<sup>1</sup>

*Adult female* (?).—Similar to the adult male, as described above, but duller in color; head much less yellowish (quite concolor, in fact, with back, etc.), without pure yellow on forehead, supraloral region, or eyelids; black spots on scapulars and interscapulars much less distinct; length (skins), 107.2–115.6 (110.7); wing, 64.8–71.1 (68.8); tail, 45.7–53.3 (50); exposed culmen, 9.4–10.2 (9.9); depth of bill at base, 4.8–5.1 (5); tarsus, 17.8–18 (17.9); middle toe, 11.7–12.4 (12.2).<sup>2</sup>

*Immature* (?) *male*.—Similar to the adult female, as described above, but wing-coverts margined and edged with yellowish green, contrasting strongly with the greenish blue edgings of remiges; feathers of throat with large and distinct central spots of black; length (skin), 125.7; wing, 66.8; tail, 49.5; exposed culmen, 10.7; depth of bill at base, 5.6; tarsus, 19.3; middle toe, 11.7.<sup>3</sup>

Having a very small and unsatisfactory series of this species for examination, I am in doubt as to the proper name which the birds from Costa Rica and the Isthmus of Panama should bear. The only specimen I have been able to examine is from Dota, Costa Rica, and, judging from the loose texture of the plumage, seems to be an immature, though full-grown, bird. It is marked as a male. If the birds of this species are the same from Costa Rica to Venezuela, then it so happens that all the Colombian specimens which I have seen (three from “Bogota”) are females, for none of them have yellow about the head, while all of those seen from Venezuela (only two in number, however), are males, the head being bright yellowish green (much yellower than the back), becoming pure canary yellow on the anterior portion of the forehead and thence backward to and including the upper eyelid, the lower eyelid also being pure yellow; the black spots on back and scapulars being at the same time far larger, more sharply defined, and deeper black. Four specimens from Trinidad agree in all these characters with the two Venezuelan specimens, but have shorter wings and are easily distinguished by the larger and relatively broader black spots on the chest. I have not seen examples from British Guiana, but these (the true *C. guttata*) are said by Salvin and Godman to be distinguished by having the under parts “much less spotted, the spots

<sup>1</sup> Two specimens from Venezuela.

<sup>2</sup> Three specimens from “Bogota,” Colombia.

<sup>3</sup> One specimen from Dota, Costa Rica.

being almost confined to the chest, the throat and abdomen being plain."

Costa Rica (Tucurriqui; Angostura; Dota; Turrialba) and southward through Colombia to Ecuador (Valle de Mindos), Venezuela (Caracas; Puerto Cabello; San Cristobal) and Trinidad.

*Calliste chrysophrys* SCLATER, Jardine's Contr. Orn., 1851, 24, 54, pl. 69, fig. 2 (Venezuela; coll. P. L. Sclater).

*Calliste guttulata* BONAPARTE, Compt. Rend., xxxii, 1851, 76 (Mindos, n. w. Ecuador).—SCLATER, Tanagr. Cat. Specif., 1854, 11; Proc. Zool. Soc. Lond., 1855, 157 (Bogota, Colombia); 1856, 19, part (Venezuela; Trinidad.)

*Isotrochus guttulata* BONAPARTE, Rev. et Mag. de Zool., iii, Mar., 1851, 144; Note sur les Tang., 1851, 18.

*Calliste guttulata* (not *Callispiza guttulata* Cabanis) SCLATER, Proc. Zool. Soc. Lond., 1856, 249, part (monogr.; Venezuela; Trinidad; Bogota, Colombia; "Ecuador"); Synop. Av. Tanagr., 1856, 75; Monogr. Calliste, 1857, 21, part, pl. 10 (Trinidad; Caracas, Venezuela; Bogota, Colombia; valley of Mindos, Ecuador); Cat. Am. Birds, 1862, 64 (Venezuela; Trinidad; Anolaima, Colombia); Cat. Birds Brit. Mus., xi, 1868, 105, part (Puerto Cabello, Caracas, and San Cristobal, Venezuela; Bogota, Colombia; s. slope Volcan de Chiriqui; Tucurriqui and Angostura, Costa Rica, etc.).—TAYLOR, Ibis, 1864, 82 (Trinidad).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 627 (Venezuela); 1875, 237 (do.).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Angostura, Turrialba, and Dota, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 298 (Costa Rica).—FINSCH, Proc. Zool. Soc. Lond., 1870, 579 (Trinidad).—SALVIN, Proc. Zool. Soc. Lond., 1870, 187 (Volcan de Chiriqui).—WYATT, Ibis, 1871, 325 (Ocaña, Colombia).—SALVIN and GODMAN, Biol. Centr. Am., Aves, i, 1883, 267, part (Turrialba, etc., Costa Rica; Volcan de Chiriqui; Colombia; Ecuador; Venezuela; Trinidad).—BERLESCHECH, Journ. für Orn., 1884, 289 (Bucaramanga, Colombia).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Turrialba).—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 29 (Trinidad).

[*Calliste*] *guttulata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19, part (Vene-

The above very imperfect description may be supplemented by the following, taken from the colored plate cited:

Pileum with feathers black centrally, margined with light blue, becoming light green on nape; interscapular region light green, the feathers with black central spots (partly exposed); wings black, the greater coverts and secondaries edged with blue, the lesser coverts wholly blue (more greenish along posterior margin); beneath very pale greenish, the feathers of lower throat and sides of chest (not the breast, as in the description quoted) with large central spots of black; lores black.

*Calliste* s. *Callispiza sclateri* (not *Calliste sclateri* Lafresnaye) CABANIS, Journ. für Orn., xiv, May, 1866, 163 (Guatemala; coll. Berlin Mus.).

*Calliste cabanisi* SCLATER, Ibis, 2d ser., iv, Jan., 1868, 71, pl. 3 (Costa Rica, w. Guatemala; coll. Berlin Mus.); Cat. Birds Brit. Mus., xi, 1886, 123.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 271.

[*Calliste*] *cabanisi* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.

### CALOSPIZA GYROLOIDES (Lafresnaye).

#### BLUE-RUMPED GREEN TANAGER.

*Adult male*.—Head, except throat, uniform bright reddish chestnut or bay; general color of upper parts bright yellowish grass green, separated from bay of head by a more or less distinct nuchal band or half-collar of yellow; rump cerulean or turquoise blue, the feathers green immediately beneath surface, gray basally; lesser wing-coverts mostly yellow; under parts cerulean or turquoise blue (the feathers green immediately beneath surface and gray at base), passing into yellowish green on upper part and sides of throat, the sides and flanks more or less tinged with green; under tail-coverts and posterior portion of flanks clear yellowish green; thighs cinnamon; bill blackish brown, becoming paler on basal portion of mandible; legs and feet horn color (in dried skins); length (skins), 121.9–141 (128.8); wing, 71.1–82.6 (77); tail, 47.5–54.6 (51.3); exposed culmen, 9.9–12.2 (10.7); depth of bill at base, 4.8–6.1 (5.6); tarsus, 16.5–19.6 (17.8); middle toe, 11.4–12.7 (11.9).<sup>1</sup>

*Adult female*.—Similar in coloration to the adult male, but much duller; head much duller chestnut, sometimes strongly olivaceous on pileum, the color without the sharp definition of the male; blue of rump more restricted, sometimes obsolete; lesser wing-coverts with less yellow, sometimes merely tinged with yellow; blue of under parts paler, more greenish (nile blue, more turquoise on breast); length (skins), 121.9–139.7 (131.8); wing, 69.6–76.2 (73.2); tail, 47.8–50.8

<sup>1</sup> Fifteen specimens.

(48.8); exposed culmen, 9.7-10.9 (10.4); depth of bill at base, 5.1-5.8 (5.6); tarsus, 16.5-18.3 (17.8); middle toe, 11.7-12.7 (11.9).<sup>1</sup>

*Immature female.* Entirely green above, including head and neck, the color duller than in the adult female; beneath pale green, broken by more or less exposed buffy whitish, this forming a subterminal spot or bar to each feather, the middle portion of feathers of chest more grayish, with a darker grayish bar between the light gray and the green tip; abdomen and under tail-coverts yellowish white, tinged with pale green.

*Immature male.*—Similar to immature female, but green of head interspersed with orange-chestnut feathers and abdomen largely pale blue.

Costa Rica (Gusitil; Turrialba; Barranca; Dota; Savanilla de Pirris; Navarro; Cartago; San Marcos; Sarché de Alajuela, etc.) and southward through Colombia and Ecuador to Peru (Chyavetas; Cosnipata; Rio Javarri; Mapoto), western Bolivia (Mapiri) and upper Amazons (Ega; Maribatanas).

*Aglaia gyrola* (not *Tanagra gyrola* Linnæus) LAFRENNAYE and D'ORBIGNY, Mag. de Zool., 1837 (Synopsis Avium, 1, p. 32).

*Tanagra gyrola* (not of Linnæus) D'ORBIGNY, Voy. Amer. Mérid., Ois., 1839, 272.

*Callospiza gyrola* TACHUÍ, Wiegmann's Archiv. für Naturg., 1844, 286 (Peru); Fauna Peruana, Aves, 1847, 202.

*Aglaia peruviana* (not *Tanagra peruviana* Desmarest) SWAINSON, Anim. in Menag., 1838, 356 (Peru; coll. W. Hooker).

*C[alliste] cyanoventris* (not *Tanagra cyanoventris* Vieillot) GRAY, Gen. Birds, ii, 1844, 366.

Nine specimens



*Gyrola cyanoventris* BONAPARTE, Rev. et Mag. de Zool., iii, Mar., 1851, 139; Note sur les Tang., 1851, 13.

*Aglaia gyroloides* LAFRESNAYE, Rev. Zool., x, Sept., 1847, 277, in text (Central America).

*C[alliste] gyroloides* GRAY, Gen. Birds, iii, 1849, App., p. 17.

[*Calliste*] *gyroloides* BONAPARTE, Consp. Av., i, 1850, 234.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.

*Calliste gyroloides* SCLATER, Jardine's Contr. Orn., 1851, 67; Proc. Zool. Soc. Lond., 1854, 115 (prov. Quijos, Ecuador); 1855, 158 (Bogota, Colombia); 1856, 142, 255 (monogr.); 1857, 264 (up. Amazon); 1858, 74 (Rio Napo, e. Ecuador), 453 (Zamora, e. Ecuador); 1859, 139 (Pallatanga, e. Ecuador); 1860, 87 (Nanegal, w. Ecuador), 292 (Esmeraldas, w. Ecuador); Synop. Av. Tanagr., 1856, 81; Monogr. Calliste, 1857, 57, pl. 26 (David, Chiriqui; Bogota; Rio Napo, e. Ecuador; wood region e. Peru; e. base Bolivian Andes); Cat. Am. Birds; 1862, 67 (Bogota; e. Peru); Cat. Birds Brit. Mus., xi, 1886, 117 (Guatila and Turrialba, Costa Rica; Santa Fé, Calovevora, Veragua, Bugaba, Chiriqui; Lion Hill, Panama R. R.; Bogota, Remedios, and Concordia, Colombia; San José, Sarayacu, and Rio Napo, Ecuador; Ega, up. Amazon; e. Peru).—CASSIN, in Gilliss's Rep. U. S. Astr. Exp., ii, 1855, 182, pl. 19, fig. 1 (Peru).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 332 (Panama R. R.); ix, 1868, 98 (Barranca, Guatila, and Dota, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 350 (Panama R. R.); 1867, 749 Chyavetas, e. Peru); 1873, 185 (Cosnipata, e. Peru), 261 (Rio Javari and Chyavetas, e. Peru); 1879, 499 (Antioquia, Colombia), 599 (Bolivia).—FRANTZIUS, Journ. für Orn., 1869, 298 (Savanilla de Pirris, etc., Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1867, 138 (Santa Fé, Veragua; David, Chiriqui); 1870, 186 (Volcan de Chiriqui and Bugaba, Chiriqui; Boquete de Chitra, Cordillera del Chucu, and Calovevora, Veragua).—WYATT, Ibis, 1871, 325 (bet. Bucaramanga and Rio Magdalena, Colombia).—PELZELN, Orn. Bras., 1871, 207 (Maribatanas, up. Amazon).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1874, 514 (centr. Peru); 1882, 11 (Huambo, Ecuador); Orn. du Pérou, ii, 1885, 463.—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Navarro, Costa Rica).—BERLEPSCH, Journ. für Orn., 1883, 289 (Bucaramanga, Colombia).—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 545 (Chimbo, w. Ecuador).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 270.—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 78 (Mapoto, centr. Ecuador).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Cartago, Naranjo de Cartago, Pozo Azul de Pirris, Sarché de Alajuela, and Los Anonas de San José, Costa Rica).—ALLEN, Bull. Am. Mus. N. H., ii, 1889, 71 (Quito, Ecuador), 81 (Mapiri, Bolivia).—CHERRIE, Anal. Inst. Fis.-Geog. Nac. Costa Rica, vi, 1893, 13 (Pozo Azul del Pital and San Marcos, Costa Rica).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 357, 1899, 15 (San José and Valle del Zamora, e. Ecuador; Guala, w. Ecuador; crit.).

[*Calliste*] *gyroloides* DUBOIS, Bull. Ac. Roy. Belg., xxxviii, 1874 (6), (crit.).

[*Calliste gyrola*] var.  $\alpha$ . *gyroloides* DUBOIS, Bull. Ac. Roy. Belg., xxxviii, July, 1874 (8).

*Callispiza gyroloides* SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 174 (Costa Rica).

*Calospiza gyroloides* STONE, Proc. Ac. Nat. Sci. Phila., 1899, 307 (Ibaque, centr. Colombia).

## CALOSPIZA LAVINIA (Cassin).

## LAVINIA'S TANAGER.

*Adult male*.—Head, except chin and throat, bright glossy orange-maroon, or madder brown; rest of upper parts mainly bright glossy yellowish grass green, or parrot green, the feathers of the hindneck broadly tipped with saffron yellow, producing a more or less conspicuous half-collar; wings yellowish grass green, the middle and greater coverts tinged with rusty, the remiges (except tertials) edged for basal half or more with orange-brown or rufous; under parts, including throat, clear bright yellowish green, the abdomen turquoise blue; chin turquoise blue, or tinged with that color, margined anteriorly with brownish red; thighs russet; maxilla horn brown, mandible paler; legs and feet horn color (in dried skins); length (skins), 120.7–135.9 (125); wing, 69.9–71.9 (70.6); tail, 45.2–47.2 (45.7); exposed culmen, 9.7–10.7 (10.4); depth of bill at base, 5.6–6.6 (6.1); tarsus, 17.3–18 (17.5); middle toe, 12.4–12.7.<sup>1</sup>

*Adult female*. Much duller than adult male, and without the brownish red head; above plain glossy yellowish grass green, sometimes tinged anteriorly with dull orange, especially on pileum; edges of remiges more or less tinged with yellowish olive basally; under parts light green, changing to light turquoise or Nile blue on abdomen; bill and feet as in adult male; length (skins), 114.3; wing, 65.8–66.8 (66.3); tail, 43.2–43.4; exposed culmen, 10.2–10.7 (10.4); depth of bill at base, 5.1–5.3; tarsus, 16.5–17.8; middle toe, 1.04–12.7 (11.4).<sup>2</sup>

black; rump bright opalescent green, changing to blue on upper tail-coverts, all the feathers blackish beneath the surface; lesser wing-coverts rich blue (varying from cobalt to light smalt); rest of wings and tail black with blue edgings; under parts of body, and under tail-coverts, plain light cinnamon or cinnamon-ocher, paler next to squamately marked feathers of chest; maxilla black, mandible blackish terminally, horn color basally (in dried skins); legs and feet horn color (in dried skins).

*Young (first plumage).*—Head, neck, back, and scapulars dull black, broken on sides of neck and on auricular region by pale greenish buffy or buffy greenish tips to the feathers; lesser wing-coverts dull greenish blue; rest of wings and tail dull blackish with greenish blue or bluish green edgings; rump and upper tail-coverts dusky olive, the feathers tipped with pale dull greenish; under parts of body and under tail-coverts plain light cinnamon or cinnamon-ocher, paler on chest, where spotted with dusky.

*Adult male.*—Length (skins), 137.2–144.8 (141); wing, 68.6–70.6 (69.6); tail (one specimen), 49; exposed culmen (one specimen), 9.1; depth of bill at base, 5.6–5.8; tarsus, 19.8; middle toe, 12.2–12.4.<sup>1</sup>

*Adult female.*—Length (skins), 129.5–132.1 (131.3); wing, 68.6–70.1 (69.3); tail, 46.5–49.3 (48); exposed culmen, 9.4; depth of bill at base, 5.1–6.1 (5.6); tarsus, 18.8–19.6 (19.1); middle toe, 11.9–12.2 (12.1).<sup>2</sup>

Costa Rica (San José; Rancho Redondo; Turrialba; Navarro; Guadalupe; Cartago; Irazú; Quebrada Honda) and Veragua (Cordillera del Chucu).

*Calliste dowii* SALVIN, Proc. Zool. Soc. Lond., 1863, 168 ("San José," i. e., Rancho Redondo de San José, Costa Rica; coll. Salvin-Godman?); 1870, 187 (Cordillera del Chucu, Veragua); Ann. and Mag. Nat. Hist., 3d ser., xiii, 1864, 104.—SCLATER, Ibis, 1863, 451, pl. 12 (San José, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (San José, Turrialba, and Navarro, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 298 (Guadalupe and San José, Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Navarro, Costa Rica).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Cartago? and Rancho Redondo de San José).

[*Calliste*] *dowii* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.

*Calliste dowi* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 272 (Irazú, etc., Costa Rica, etc.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 124 (Quebrada Honda, etc., Costa Rica, etc.).

### CALOSPIZA LARVATA LARVATA (Du Bus).

#### GOLDEN-MASKED TANAGER.

*Adult male.*—Anterior portion of forehead and malar region, chin, lores, and eyelids black; posterior portion of forehead, suborbital region, and most of malar and auricular regions campanula blue, with a narrow posterior margin of light greenish blue (nile blue); crown,

<sup>1</sup>Two specimens.

<sup>2</sup>Three specimens.



occiput, hindneck, and sides of neck golden buff, changing from deep orange-buff to oil green, according to inclination of the light; throat cinnamon-rufous, usually separated from black of chin by a narrow line of pale bluish; back, scapulars, chest, and sides of breast uniform deep black; lesser wing-coverts rich campanula blue, the middle coverts bright Nile blue; rump glossy light blue (changing from Nile blue to turquoise); upper tail-coverts black, broadly margined with light bluish green; wings (except lesser and middle coverts) black, the greater coverts edged with light blue and greenish, the remiges and rectrices with light yellowish green, more buffy on tertials; abdomen and median portion of breast white; anal region and under tail-coverts pale buffy, the latter with concealed central portion dusky; sides rich campanula blue, passing into light greenish blue (turquoise or Nile blue) on flanks; bill black; legs and feet dusky (in dried skins); length (skins), 116.8-132.1 (122.9); wing, 68.1-72.6 (71.1); tail, 45.7-50.8 (48.8); exposed culmen, 8.9-10.2 (9.7); depth of bill at base, 5.1-5.3 (5.1); tarsus, 16.3-18.5 (17.5); middle toe, 10.4-12.7 (11.7).<sup>1</sup>

*Adult female.* Very similar to the adult male and apparently not always distinguishable, but usually slightly duller in coloration; length (skins), 116.8-132.1 (123.2); wing, 65.5-69.9 (67.8); tail, 45.2-49.5 (47.2); exposed culmen, 10.2; depth of bill at base, 5.1-5.6 (5.3); tarsus, 17-17.8 (17.3); middle toe, 10.4-11.4 (10.9).<sup>2</sup>

*Young, first plumage.*—Head and neck (except chin and throat) dull light green (chromium green), each feather with a small central spot of dusky; lores, eyelids, anterior portion of malar region, and chin dusky; throat, median line of chest (narrowly), median portion of breast, and abdomen dull whitish, slightly tinged with yellowish; a patch on each side of chest and breast greenish dusky. Sides dull gray-

Southern Mexico, in States of Chiapas (Ocuilapa; Palenque) and Tabasco (Tenpa), to northern Honduras (Rio Blanca; Rio Chamelecon; San Pedro).

- Calliste larvata* De Brs, Esquis. Orn., 1845 (?), pl. 9 (Tabasco, s. e. Mexico).—  
 BONAPARTE, *Comp. Av.*, i, 1850, 236. —SCLATER, *Proc. Zool. Soc. Lond.*, 1856, 19, 260, (monogr., Tabasco; Rio Chamelecon, Honduras). *Synop. Av. Tanagr.*, 1856, 86. Monogr. Caliste, 1857, 81, pl. 36, Cat. Am. Birds, 1862, 70 (Choctum, Guatemala). Cat. Birds Brit. Mus., xi, 1886, 124, part. —SCLATER and SALVIN, *Ibis*, 1859, 16 (Rio Chamelecon); *Proc. Zool. Soc. Lond.*, 1870, 836 (San Pedro, Honduras). —SALVIN, *Ibis*, 1859, 467 (Yzabal, Guatemala). —SALVIN and SCLATER, *Ibis*, 1860, 33 (Yzabal, Guatemala). —SALVIN and GOMMAN, *Biol. Centr. Am.*, AVES, i, 1883, 274, part (Tabasco, s. Mexico, Belize, Brit. Honduras; Yzabal, Choctum, and Chisee, Guatemala; Rio Chamelecon and San Pedro, Honduras).  
*[Calliste larvata]* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 19, part (s. Mexico; Guatemala, Honduras).  
*[Calliste larvata]* GRAY, *Gen. Birds*, iii, App., 1849, 17. —DUBOIS, *Bull. Ac. Roy. Belg.*, xxxviii, 1874 (8), (s. Mexico).  
*Tanus brevatus* BONAPARTE, *Rev. et Mag. de Zool.*, iii, March, 1851, 42; *Note sur les Tang.*, 1851, 16.  
*Calliste larvata typica* SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 125, in text.  
*[Calliste larvata]* a subsp. *typica* SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 125, in list of specimens (localities in Guatemala, Brit. Honduras, and Honduras).  
*[Calliste larvata]* var. *tanny* (not *Aglais fanny* Lafresnaye) DUBOIS, *Bull. Ac. Roy. Belg.*, xxxviii, 1874 (8), part (Guatemala).  
 (?) *Calliste larvata* (not *C. larvata* Cassin) LANTZ, *Trans. Kansas Ac. Sci.*, 1896-97 (1899), 223 (Santo Tomas, Guatemala).

#### CALOSPIZA LARVATA FANNY (Lafresnaye).

##### MRS. WILSON'S TANAGER.

Similar to *C. l. larvata*, but averaging slightly smaller, colors of head and sides paler, and greenish edgings to remiges, rectrices, and greater wing-coverts less distinct, sometimes altogether wanting on tail and greater wing-coverts; general color of head lighter golden buffy with more pronounced greenish and less pronounced reddish blue in opposite positions to the light, and not conspicuously darker on throat; blue of forehead and cheeks paler; that of sides and flanks also paler, with very little purplish blue anteriorly (sometimes none); blue of rump and smaller wing-coverts also paler.

*Young, first plumage.* —Head and neck light bluish green (malachite), the feathers dusky grayish basally, producing a minutely mottled appearance; back and scapulars dusky grayish green, becoming nearly black on outermost scapulars; rump light bluish green (malachite); under parts dull whitish, becoming grayish laterally, the throat and chest freckled with grayish; anal region and under tail-coverts pale brownish buffy; wings and tail as in adults, but lesser and middle wing-coverts light grayish green instead of blue.

*Adult male*.—Length (skins), 105.4–130.8 (118.1); wing, 66.8–71.4 (69.6); tail, 45.5–50.3 (47.5); exposed culmen, 9.1–10.4 (9.7); depth of bill at base, 4.8–5.8 (5.1); tarsus, 16.3–17.8 (17.3); middle toe, 11.2–12.2 (11.7).<sup>1</sup>

*Adult female*.—Length (skins), 113–123.2 (117.3); wing, 64.3–70.4 (66.3); tail, 43.9–46.7 (45.2); exposed culmen, 8.4–10.2 (9.7); depth of bill at base, 4.6–5.3 (5.1); tarsus, 15.7–16.8 (16.5); middle toe, 10.4–11.7 (10.9).<sup>2</sup>

Southern Honduras (Rio Segovia) to northern Colombia (province of Antioquia).

*Aglais funny* LAFRESNAYE, Rev. Zool., x, Mar., 1847, 72 (Colombia; coll. Lafresnaye).

[*Calliste*] *funny* GRAY, Gen. Birds, iii, App., 1849, 17.—DUBOIS, Bull. Ac. Roy. Belg., xxxviii, 1874 (7), part (crit.).

[*Calliste*] *funny* BONAPARTE, Conspect. Av., i, 1850, 236.—DES MURS, Icon. Orn., 1876, pl. 56, fig. 1.

[*Calliste larvata*] var. *funny* DUBOIS, Bull. Ac. Roy. Belg., xxxviii, July, 1874, 8, part (Colombia).

*Calliste larvata* var. *funny* BOUCARD, Cat. Avium, 1876, 242, no. 7560 (Veragua).

*Caloepiza larvata funny* BANGS, Proc. New Engl. Zool. Club, ii, Sept. 20, 1900, 30 (Loma del Leon, Panama R. R.).

*Calliste franciscæ* SCLATER, Proc. Zool. Soc. Lond., 1856, 142, 261 (David, Chiriqui); Synop. Av. Tanagr., 1856, 87; Monogr. *Calliste*, 1857, 83 (Chiriqui); Cat. Am. Birds, 1862, 359 (Panama).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 142 (Turbo, n. Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 298, 332 (Lion Hill, Panama R. R.); ix, 1868, 98 (Angostura, San José, and Turrialba, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 350 (Lion Hill).—SALVIN, Proc. Zool. Soc. Lond., 1867, 138 (Cordillera de Tolé and Santa Fé, Veragua; David, Chiriqui); 1870, 187 (Bugaba, Chiriqui; Mina de Chorcha, Chitra, Laguna del Castillo, and Calovevora, Veragua).—FRANTZIS, Journ. für Orn., 1869, 298 (Costa Rica).

*Calliste francescæ* LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 176 (David, Chiriqui), 180 (Greytown, Nicaragua).

*Calliste larrata francescæ* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 125, in text.

[*Calliste larrata*] b. subsp. *francescæ* SCLATER, Cat. Birds. Brit. Mus., xi, 1886, 125, in list of specimens (Chontales, Nicaragua; Turrialba and Angostura, Costa Rica; Cordillera de Tolé, Calovevora, Mina de Chorchá, Santa Fé, and Castillo, Veragua; Panama and Paraiso Station, Panama R. R.; Remedios, prov. Antioquia, Colombia).

*Callispiza franciscæ* SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 175 (Costa Rica).

*Calliste larrata* (not of Du Bus) SCLATER, Jardine's Contr. Orn., 1851, 64 (Chiriqui; Veragua).—CASSIN, in Rep. U. S. Astr. Exp. (Gilliss), ii, 1855, 182, part, pl. 18, fig. 2 (Central America; Colombia).—SALVIN, Ibis, 1872, 316 (Chontales, Nicaragua).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Naranjo, Orosi, and San Carlos, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 499 (Antioquia, Colombia).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 274, part (Nicaraguan, Costa Rican, and Colombian localities and references).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 124, part.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Naranjo de Cartago, Jiménez, Trojas de Puntarenas, and Pozo Azul de Pirris, Costa Rica).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1887, 585 (Segovia R., Honduras).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 488 (Rio Escondido, Nicaragua).

#### CALOSPIZA INORNATA (Gould).

##### PLAIN-COLORED TANAGER.

*Adult male*.—Above plain slate-gray, paler and more bluish on rump and upper tail-coverts; lesser wing-coverts bright cerulean or turquoise blue, more purplish blue on lower portion and along posterior margin; rest of wings and tail dull black or dusky, with slate-gray edgings; sides of head and neck like pileum, etc.; lores, apex of malar region, and anterior margin of chin blackish; lower chin, throat, chest, sides, and flanks dull light gray, the first inclining to white; median portion of breast and abdomen white, the lower portion of the latter tinged with buffy; under tail-coverts dull white or pale buffy, the longer feathers with concealed portion mostly grayish; maxilla black; mandible grayish with dusky tip; legs and feet dusky (in dried skins); length (skins), 109.2–130.8 (119.4); wing, 66.5–68.1 (67.3); tail, 45.2–48.3 (46.5); exposed culmen, 8.4–9.4 (8.9); depth of bill at base, 5.1–5.6; tarsus, 16–17.3 (16.8); middle toe, 11.7–11.9 (11.8).<sup>1</sup>

*Adult female*.—Similar to the male and not always distinguishable, but usually (?) very slightly duller in color; length (skins), 114.3–119.4 (116.8); wing, 63–64 (63.5); tail, 41.7–43.2 (42.4); exposed culmen, 8.9; depth of bill at base, 5.6; tarsus, 16–16.8 (16.3); middle toe, 11.9–14 (13).<sup>2</sup>

<sup>1</sup> Five specimens.

<sup>2</sup> Two specimens.

Veragua to central Colombia (Bogota; Remedios; Nichi; Bucaramanga, etc.).

*Calliste inornata* GOULD, Proc. Zool. Soc. Lond., 1855, 158 (Bogota, Colombia; coll. J. Gould).—SCLATER, Proc. Zool. Soc. Lond., 1856, 258 (monogr.); Synop. Av. Tanagr., 1856, 84; Monogr. Calliste, 1857, 103, pl. 45; Cat. Am. Birds, 1862, 359 (Panama); Cat. Birds Brit. Mus., xi, 1888, 121 (Veragua; Panama, Lion Hill, and Paraiso Station, Panama R. R.; Bogota, Remedios, Nichi, and Antioquia, Colombia).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 142 (Turbo, n. Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 298 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 350 (Lion Hill); 1879, 499 (Antioquia).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 273.—BERLEPSCH, Journ. für Orn., 1884, 291 (Bucaramanga, Colombia).

[*Calliste*] *inornata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.

*Calliste ornata* [lapsu] LAWRENCE, Ann. Lyc. N. Y., vi, 1861, 332 (Panama R. R.; crit.).

*Calospiza inornata* BANGS, Proc. New Engl. Zool. Club, ii, Sept. 20, 1900, 30 (Loma del Leon, Panama R. R.).

#### CALOSPIZA CUCULLATA (Swainson).

##### HOODED TANAGER.

*Adult male*.—Pileum uniform very dark chestnut or rich seal brown; loreal, suborbital, and auricular regions dusky, the feathers sometimes indistinctly tipped with dull grayish blue; hindneck, sides of neck, back, scapulars, rump, and upper tail-coverts plain buffy, with golden gloss, or grayish green, according to position with reference to the light; wing-coverts grayish green (nearly french green), the lesser coverts somewhat more bluish (terre-verte green); remiges and rectrices black edged with green (broadly on secondaries and rectrices, the outer webs of tertials almost wholly green); chin and upper throat light greenish buffy, the bases of feathers dusky; lower throat and chest grayish

Venezuela<sup>1</sup> (Angostura); island of Grenada, Lesser Antilles.

*A[glia] cucullata* SWAINSON, Orn. Drawings, 1841, pl. 7.

*C[alliste] cucullata* GRAY, Gen. Birds, ii, 1844, 366.

[*Calliste*] *cucullata* BONAPARTE, Consp. Av., i, 1850, 234.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 19.

*Calliste cucullata* BONAPARTE, Rev. et Mag. de Zool., iii, 1851, 140; Note sur les Tang., 1851, 14.—SCLATER, Jardine's Contr. Orn., 1851, 63 ("Brazil"); Proc. Zool. Soc. Lond., 1856, 19, 253 (monogr.); Synop. Av. Tanagr., 1856, 79; Monograph *Calliste*, 1857, 45, pl. 20 (Angostura, Venezuela); Ibis, 1876, 410; Cat. Birds Brit. Mus., xi, 1886, 113, part (Venezuela).—BURMEISTER, Syst. Ueb. Th. Bras., iii, 1856, 183 ("Brazil").—CORY, Cat. Birds W. I., 1892, 114, 151 (Grenada, Lesser Antilles).

*Calliste versicolor* (not of Lawrence, 1878) LAWRENCE, Proc. U. S. Nat. Mus., i, 1879, 269 (Grenada); ix, 1886, 613 (Grenada; habits; descr. nest and eggs).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 113, part (Grenada; Venezuela).

[*Calliste*] *versicolor* CORY, List Birds W. I., revised ed., 1886, 11, part.

### CALOSPIZA VERSICOLOR (Lawrence).

#### ST. VINCENT TANAGER.

Similar to *C. cucullata*, but larger and lighter colored, the pileum clear light chestnut or chestnut-tawny instead of very dark chestnut or seal brown.

*Adult male*.—Pileum clear, bright, light chestnut or tawny-chestnut; loreal, suborbital, and auricular regions dusky, the last with feathers tipped with dull green or grayish green; hindneck, back, scapulars, and rump opalescent, changing from light silvery green to golden buff or even pinkish, according to direction of the light; upper tail-coverts dull grayish green; lesser and middle wing-coverts dull grayish bluish green; outer webs of greater coverts similar but more decidedly green; remiges and rectrices black broadly edged with dull green or grayish green, the outer webs of tertials and the middle rectrices almost wholly of this color; chin and upper throat pale greenish grayish, the feathers darker basally, producing an indistinctly freckled appearance; rest of under parts opalescent, changing from blue to lilac and golden according to direction of the light; under tail-coverts cinnamon, and more or less of this color showing on under parts of the body where plumage is disarranged; maxilla brownish black, mandible horn color (in dried skins); iris brown; legs and feet dusky horn color (in dried skins); length (skins), 144.8–157.5 (149.4); wing, 76.7–78.7 (77.5); tail, 54.4–55.9 (55.1); exposed culmen, 12.4–13.2 (12.7); depth of bill at base (one specimen), 6.9; tarsus, 20.8–21.3 (21.1); middle toe, 14–14.7 (14.5).<sup>2</sup>

*Adult female*.—Similar to the adult male, but pileum lighter, more tawny; hindneck, back, scapulars, and rump dull opalescent green, changing to bright yellowish green and golden buffy; under parts

<sup>1</sup>I have not seen specimens from Venezuela; they may, or may not, be identical with Grenada examples.

<sup>2</sup>Four specimens.

mainly dull light green, without the blue, lilac, or strongly golden changeable hues of the adult male; edgings to wings and tail more yellowish green; length (skins), 149.9-160 (154.2); wing, 75.7-77.7 (76.5); tail, 53.6-54.6 (54.1); exposed culmen, 11.7-12.4 (12.2); depth of bill at base (two specimens), 7.6; tarsus, 20.8-21.16 (21.3); middle toe, 14.2-15.2 (14.7).<sup>1</sup>

Island of St. Vincent, Lesser Antilles.

*Calliste versicolor* LAWRENCE, Ann. N. Y. Acad. Sci., i, June, 1878, 153 (St. Vincent, Lesser Antilles; coll. U. S. Nat. Mus.); Proc. U. S. Nat. Mus., i, 1878, 190, 487 (St. Vincent).—CORY, Birds W. I., 1889, 82 (do.); Cat. W. I. Birds, 1892, 16, 114, 134, 151.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 113, part (St. Vincent).

[*Calliste*] *versicolor* CORY, List Birds W. I., 1885, 11 (St. Vincent).

*Calliste cucullata* (not *Aglaius cucullata* Swainson) SCLATER and SALVIN, Ibis, 1878, 357 (crit.).—CORY, Auk, iii, 1886, 195 (St. Vincent); v, 1888, 157.

[*Calliste*] *cucullata* CORY, List Birds W. I., revised ed., 1886, 11 (St. Vincent).

Genus TANAGRA Linnæus.

*Tanagra* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 313 (Type, by elimination, *T. episcopus* Linnæus or *T. stygia* Linnæus.)

*Thecaupis* BOIE, Isis, 1826, 947. (Type, *Tanagra archepiscopus* Desmarest, = *T. ornata* Sparrmann.)

Medium-sized Tanagers with exposed culmen decidedly shorter than middle toe without claw, tarsus not more than one-third as long as tail, maxillary tomium nearly straight, and with the head unicolored.

Bill varying from slenderly conoid (*T. ornata*) to turgid conoid (*T. bonariensis*), but usually intermediate between these extremes; exposed culmen more than half as long as tarsus, nearly straight for basal half or more, more or less strongly convex terminally, the tip slightly uncinate; gonys a little shorter than length of maxilla from nostril, slightly convex or nearly straight, more or less ascending terminally; maxillary tomium nearly straight, distinctly notched subterminally; mandibular tomium slightly convex or nearly straight; width of bill at base equal to or exceeding its basal depth. Nostril exposed, small, nearly circular or horizontally oval, with narrow anterior and superior membrane. Rictal bristles inconspicuous. Wing rather long (a little more than four to about four and three-fourths times as long as tarsus), rather pointed (ninth to sixth primaries longest, ninth longer than fourth, sometimes longer than sixth); primaries exceeding secondaries usually by more than length of tarsus (by less in *T. darwini*). Tail shorter than wing by about or more than length of tarsus, even or slightly emarginate, the rectrices of medium width, with rounded tips. Tarsus equal to or slightly longer than middle toe with claw;

<sup>1</sup> Three specimens.



lateral claws reaching about to base of middle claw; hind claw decidedly shorter than its digit. Plumage silky, blended.

*Coloration*.—(1) Plain bluish gray, with blue or greenish wings and tail; (2) purplish olive or grayish, with light-colored wing-coverts and black remiges; (3) with bluish head and greenish-yellow lesser wing-coverts, or (4) with blue head and yellow or orange rump and under parts.

*Range*.—Continental tropical America, from southern Mexico to Argentina and Peru.

Notwithstanding the great difference in the form of the bill between *T. ornata* and *T. bonariensis*, other species are so variously intermediate in this respect that, taking into consideration also the fact that other considerable differences between the various species (both as to structure and style of coloration) are not correlated with one another, I am unwilling to subdivide the genus as here defined. I must, however, expunge the *Aglaia cyanocephala* D'Orbigny and Lafresnaye, usually placed in *Tanagra*, on account of its narrow nostrils with broad superior operculum, broad and depressed bill, shorter and more rounded wing, and longer tarsus.<sup>1</sup>

#### KEY TO THE SPECIES OF TANAGRA.

- a.* Wings and tail blue, blue-green, or green; under parts pale gray, grayish blue, or grayish green. (Southern Mexico to Venezuela, and northern Peru.)

*Tanagra cana* (p. 55)

- aa.* Wings and tail blackish, at least in part; under parts olive (sometimes glossed with purplish blue).

- b.* Lores pale gray; bases of remiges light olive; adults without blue on head or neck. (Costa Rica to Amazon Valley.)

*Tanagra palmarum melanoptera* (p. 58)

- bb.* Lores black; bases of remiges yellow; adults with head and neck blue. (Southern Mexico to southern Honduras.) ..... *Tanagra abbas* (p. 60)

#### TANAGRA CANA Swainson.

##### BLUE TANAGER.

*Adult male*.—Head, neck, and under parts plain pale grayish blue, sometimes faintly tinged with greenish; back and scapulars darker grayish blue, usually more or less strongly tinged with glaucous-green, the rump and upper tail-coverts similar but brighter; lesser and middle wing-coverts bright campanula blue; rest of wings greenish blue (intermediate between glaucous-blue and turquoise), the tertials

<sup>1</sup>This I have made the type of a new genus, for which I inadvertently used (Auk, xv, July, 1898, p. 226) Cabanis's name *Hemithraupis*, afterwards (Auk, xv, Oct., 1898, pp. 330, 331) correcting the error and renaming the genus *Sporathraupis*, but unfortunately committing another in giving a false derivation (at secondhand) for the name.



more greenish and the terminal portion of primaries blackish; tail greenish blue, like wings, with black shafts; maxilla black, mandible more grayish (bluish gray or grayish blue in life?); legs and feet blackish or blackish gray (bluish gray in life?); length (skins), 146.1–161.3 (153.7); wing, 83.6–91.9 (89.4); tail, 59.2–67.1 (65); exposed culmen, 11.7–13 (12.4); depth of bill at base, 6.6–8.1 (7.1); tarsus, 19.1–20.3 (19.8); middle toe, 14.2–15.5 (14.7).<sup>1</sup>

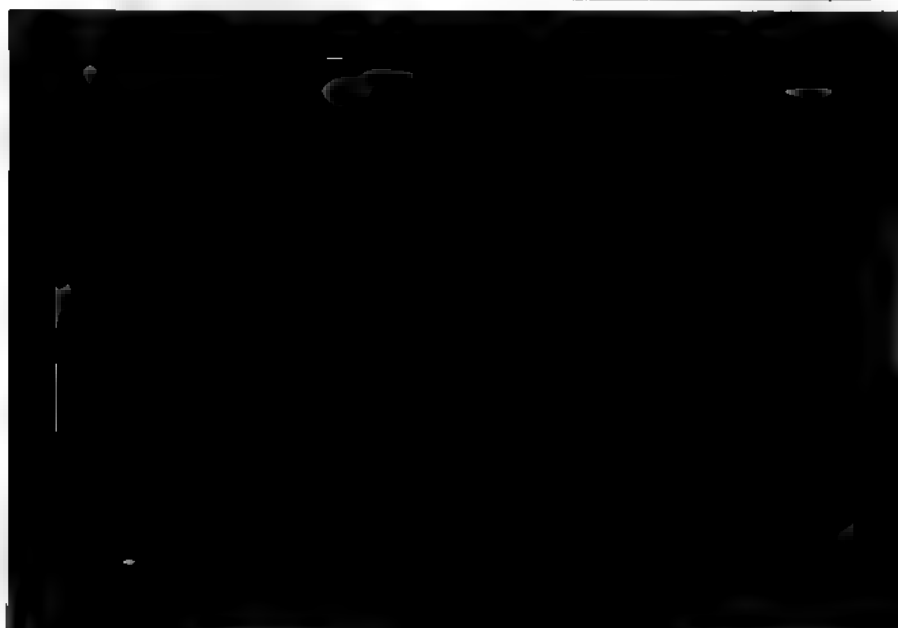
*Adult female*.—Similar to adult male and not always distinguishable, but usually duller in color, more decidedly greenish, with lesser wing-coverts less purplish blue (cerulean or light cobalt instead of campanula); length (skins), 142.2–165.1 (152.1); wing, 82.3–88.1 (83.8); tail, 58.2–63.8 (61.5); exposed culmen, 11.2–13.2 (12.4); depth of bill at base, 6.6–7.6 (6.9); tarsus, 18.8–20.8 (19.8); middle toe, 13.2–16 (14.7).<sup>2</sup>

*Immature*. Similar to adults, but colors much duller; upper parts (except wings and tail) greenish gray, brighter or more decidedly greenish posteriorly; wings and tail bluish green, or glaucous-green, the lesser wing-coverts cerulean blue; under parts pale grayish green, tinged with yellowish.

*Young (first plumage)*.—Plain greenish gray, paler beneath; wings and tail dull green (hice green or chromium green), the edges of primaries more bluish; lesser wing-coverts greenish gray or grayish green.

Southern Mexico, in State of Vera Cruz (Jalapa; Orizaba; Cordova), and southward through Central America to Venezuela, western Ecuador, and northern Peru.

<sup>1</sup>*T [anagra] cana* SWAINSON, Ornith. Drawings [Birds of Brazil], part iii, 1834, pl. 37. (Locality not given.)



*Tanagra cana* SCLATER, Proc. Zool. Soc. Lond., 1855, 157 (Bogota, Colombia); 1856, 232, part (Venezuela?; Bogota); 1859, 139 (Pallatanga, w. Ecuador); 1860, 274 (Babahoyo, w. Ecuador), 292 (Esmeraldas, w. Ecuador); Synop. Av. Tanagr., 1856, 58; Cat. Am. Birds, 1862, 75, part (Venezuela?; Santa Marta and Bogota, Colombia; Pallatanga and Babahoyo, w. Ecuador); Cat. Birds Brit. Mus., xi, 1886, 156, part (s. Mexico to Venezuela and n. Peru).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 141 (Turbo, Colombia).—LAWRENCE, Am. Lyc. N. Y., vii, 1861, 297 (Isthmus Panama); ix, 1869, 236 (Puna I., Guayaquil, w. Ecuador).—WYATT, Ibis, 1871, 325 (Colombia, up to 8,000 ft.).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (San José, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 500 (Antioquia, Colombia).—SALVIN and GOODMAN, Ibis, 1880, 120 (Santa Marta, Colombia); Biol. Centr.-Am., Aves, i, 1883, 277.—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 545 (Chimbo and Guayaquil, w. Ecuador); 1884, 290 (Cayandeled, w. Ecuador).—BERLEPSCH, Journ. für Orn., 1884, 291 (Bucaramanga, Colombia).—TACZANOWSKI, Orn. du Pérou, ii, 1884, 486.—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 81 (Yaguachi, w. Ecuador).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1887, 580, 585 (Truxillo and Segovia R., Honduras).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Alajuela, San José, Cartago, and Santa Maria de Dota, Costa Rica).—CHERRIE, Auk, ix, 1892, 25 (San José, Costa Rica).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 488 (Greytown and Rio Escondido, Nicaragua; food).—ROBINSON, Flying Trip to Tropics, 1895, 161 (Barranquilla to Honda and Guaduas, Colombia).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 141 (Santa Marta, Colombia).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 357, 1899, 17 (Vinces and Foreste del Rio Peripa, w. Ecuador).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 169 (Bonda, etc., prov. Santa Marta, Colombia).

[*Tanagra*] *cana* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.

(?) *Th* [*raupis*] *cana* CABANIS, Mus. Hein., i, 1850, 29 (Venezuela).

(?) *T* [*anagra*] *cœlestis* (not of Spix) SWAINSON, Ornith. Drawings, 1841, pl. 41 (= young).

*Tanagra swainsoni* GRAY, Gen. Birds, ii, 1844, 364.

*Tanagra episcopus* (not of Linnæus) BONAPARTE, Proc. Zool. Soc. Lond., 1837, 116 (Guatemala; descr.).—(?) CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 670.

*Tanagra sayaca* (not of Linnæus) BONAPARTE, Rev. Zool., 1851, 170; Note sur les Tang., 1851, 21.

*Tanagra cyanoptera* (not *Saltator cyanopterus* Vieillot) TACZANOWSKI, Proc. Zool. Soc. Lond., 1877, 320 (n. Peru).

*Tanagra* (*Aglaia*) *diaconus* LESSON, Rev. Zool., v, June, 1842, 175 (Realejo, Nicaragua).

*C* [*alliste*] *diaconus* GRAY, Gen. Birds, ii, 1844, 366.

*Tanagra diaconus* SCLATER, Proc. Zool. Soc. Lond., 1856, 142 (David, Chiriqui), 233 (Cordova, Vera Cruz; Guatemala; Realejo, Nicaragua; Chiriqui; Santa Marta, Colombia; monogr.); 1859, 59 (Omoa, Honduras; Belize, British Honduras; Peten, Guatemala), 364 (Jalapa, Vera Cruz); 1864, 173 (City of Mexico); Synop. Av. Tanagr., 1856, 59; Cat. Am. Birds, 1862, 75 (Colombia; Honduras; Mexico); Cat. Birds Brit. Mus., xi, 1886, 156.—SCLATER and SALVIN, Ibis, 1859, 16 (Guatemala); Proc. Zool. Soc. Lond., 1864, 350 (Isth. Panama); 1870, 836 (Honduras).—SALVIN and SCLATER, Ibis, 1860, 33 (Dueñas, Guatemala).—TAYLOR, Ibis, 1860, 111 (Honduras).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 171 (San José, Costa Rica).—LAWRENCE, Ann.

*Thraupis diaconus* CABANIS, Journ. für Orn., 1860, 330 (Costa Rica).

### BLACK-WINGED TANAGER

*Adult male*.—General color plain glossy olive, glossed with purplish blue, darker on back and scapulars, and passing into light olive-greenish on forehead and crown, the auricular region also inclining to the same color; abdomen, anal region, and under tail-coverts tinged with yellowish olive; lores, chin, and anterior portion of malar region pale gray; lesser wing-coverts dull grayish purplish blue, passing into yellowish olive on middle and greater coverts; primary coverts dull blackish or dusky, edged with greenish olive; remiges brownish black or sooty, faintly edged (especially on primaries) with olive, the basal portion abruptly and more or less extensively light greenish olive or yellowish olive in strong contrast; tail brownish black or sooty, with greenish olive edgings; bill blackish; legs and feet dusky (in dried skins, mouth, lining of bill and feet, and claws, yellowish gray).

exposed culmen, 13–13.2 (13); depth of bill at base, 6.1–7.1 (6.6), tarsus, 19.8–22.1 (21.1); middle toe, 14.7–17.5 (16.5).<sup>1</sup>

*Young (in first plumage).*—Plain, rather light, olive, slightly paler, and decidedly tinged with yellow on under parts; remiges, primary coverts, and tail brownish black or sooty, the former indistinctly light olive basally.

The series of specimens examined is much too imperfect to enable me to define very accurately the geographic range of this form. Indeed, I am doubtful whether the bird from Colombia and Costa Rica is really the true *T. palmarum melanoptera*, the type locality of which is eastern Peru. The National Museum possesses two specimens from that country (headwaters of the Rio Huallaga). These have the wing and tail decidedly longer than any specimen seen from other localities. In coloration they agree closely with some specimens from the Lower Amazon (Diamantina), both having the back darker and the general violet gloss stronger than in any examples from Colombia and Costa Rica with which I have been able to compare them.

One perplexing circumstance is the occurrence in the same locality in the Lower Amazon district of specimens representing, as to coloration at least, both the typical *T. p. palmarum* and *T. p. melanoptera*.

Eastern Nicaragua (Greytown) and Costa Rica (Tucurriquei; Naranjo; San José, Santa Rosa; Angostura; Turrialba) southward through Colombia, Ecuador, Venezuela, etc., to eastern Peru, Bolivia, Amazon Valley, and Trinidad.

*Tanagra olivascens* (not of Lichtenstein, 1823) D'ORBIGNY, Voy. Amer. Mérid., Ois., 1839, 274.—TSCHUDI, Fauna Peruana, Aves, 1847, 204.—(?) LÉOTAUD, Ois. Trinidad, 1866, 295.

<sup>1</sup> Eleven specimens.  
Specimens from different localities average as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Three adult males from Costa Rica.....	94.2	71.1	13.0	6.9	20.8	16.8
One adult male from Panama .....	93.5	73.4	13	.....	20.3	16.8
Two adult males from Trinidad .....	94	70.6	14	6.9	20.6	16
One adult male from British Guiana .....	97.5	72.9	13	6.9	20.6	17.3
Three adult males from Lower Amazon .....	94.7	71.4	13.2	6.1	20.8	17.3
Two adult males from Upper Amazon (Rio Hual- laga).....	98.6	76.7	12.7	.....	20.3	17
FEMALES.						
Three adult females from Costa Rica.....	93.7	67.6	13	6.6	20.3	16.8
One adult female from Panama .....	92.2	67.6	13	6.9	21.3	14.7
Two adult females from Lower Amazon.....	94.7	72.6	13	6.1	21.3	17.5

*Tanagra palmarum* (not of Maximilian) SCLATER, Proc. Zool. Soc. Lond., 1855, 177 (Bogota, Colombia); 1856, 234, part (Bolivia); Synop. Av. Tanagr., 1856, 60, part (do.); Cat. Am. Birds, 1862, 76, part (do.); Cat. Birds Brit. Mus., xi, 1866, 159, part.—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1873, 185 (s. Peru), 262 (upper and lower Ucayali, etc., e. Peru; habits); 1879, 500 (Antioquia, Colombia), 600 (Bolivia).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (Naranjo and San José, Costa Rica).—SALVIN and GODMAN, Ibis, 1880, 120 (Santa Marta, Colombia); Biol. Centr.-Am., Aves, i, 1883, 279, part (mostly).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1882, 13 (n. e. Peru).—RIDGWAY, Proc. U. S. Nat. Mus., vii, 1884, 173 (Trinidad).—ZIEGLER, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Naranjo de Cartago).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 488 (Greytown, Nicaragua).

[*Tanagra*] *palmarum* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21, part.

*Thraupis palmarum* FINSCH, Proc. Zool. Soc. Lond., 1870, 580 (Trinidad).

*Tanagra melanoptera* SCLATER, Proc. Zool. Soc. Lond., 1856, 235 (e. Peru; Bogota, Colombia; ex Hartlaub, manuscript); 1858, 74 (Rio Napo, e. Ecuador); 453 (Ecuador); 1860, 292 (Ecuador); Synop. Av. Tanagr., 1856, 61; Cat. Am. Birds, 1862, 76 (Bogota, Colombia; Esmeraldas and Rio Napo, Ecuador; Trinidad).—TAYLOR, Ibis, 1864, 82 (Trinidad).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 350 (Lion Hill, Panama R. R.); 1866, 180 (Ucayali, e. Peru); 1867, 749 (Huallaga, e. Peru); 1868, 627 (Venezuela).—CAMERON, Proc. Ac. Nat. Sci. Phila., 1865, 171.—SALVIN, Proc. Zool. Soc. Lond., 1867, 138 (Santiago, Veragua).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 99 (Santa Rosa, Angostura, and Turrialba, Costa Rica).—FRANTZUS, Journ. für Orn., 1869, 298 (Santa Rosa, Angostura, Turrialba, and Tucurrique, Costa Rica).—PELZELN, Orn. Bras., 1871, 209 (Forte de Rio Branco; Forte de Rio Negro; Rio Murio).—WYATT, Ibis, 1871, 326 (Bucaramanga, Aguachica, and Ocaña, Colombia).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1874, 513 (centr. Peru).

*Tanagra palmarum melanoptera* BERLEPSCH, Journ. für Orn., 1884, 291 (Bucaramanga, Colombia).—TACZANOWSKI, Orn. du Pérou, ii, 1885, 486.—CHAPMAN, Auk, vii, 1890, 267 (Santarem, lower Amazon; crit.); Bull. Am. Mus. N. H., vi, 1894, 30 (Trinidad; habits).—RICHMOND, Proc. U. S. Nat. Mus., xviii, 1896, 100 (Maricao, I. Margarita, Bay of Pinar, Bol. Soc. Wash., D. C.).

tail-coverts plain yellowish olive, the rump and upper tail-coverts more or less tinged with gray; under parts (except throat) lighter, much more yellowish, olive, more or less glossed with purplish blue anteriorly and laterally; lesser wing-coverts olive-bluish; middle and greater coverts yellowish olive, the former with slightly bluish tips; alula, primary coverts, and remiges black, the first two edged with bluish olive or olive-bluish, the last (except outermost and one to three innermost primaries) extensively and abruptly clear light yellow (sulphur or light canary) basally, that on secondaries mostly concealed by greater coverts; under wing-coverts pale yellow, with a broad exterior border of bluish olive or olive-bluish; tail blackish, with dark olive edgings, broader basally; bill black, the mandible grayish basally; legs and feet dusky (grayish in life?); length (skins), 157.5–175.3 (168.1); wing, 94–102.4 (97.8); tail, 64–73.4 (68.3); exposed culmen, 11.2–12.7 (11.9); depth of bill at base, 7.6–8.1 (7.9); tarsus, 20.8–22.6 (21.8); middle toe, 14.7–17.3 (16).<sup>1</sup>

*Adult female*.—Similar to adult male, but blue of head and neck slightly duller, especially on throat, under parts less strongly tinged with blue, and black of wings and tail rather duller; length (skins), 163.8–167.6 (166.4); wing, 93.5–96.5 (95.3); tail, 65–68.8 (66.8); exposed culmen, 12.2–13 (12.4); depth of bill at base, 7.9–8.1 (8.1); tarsus, 20.8–22.4 (21.8); middle toe, 15.2–16 (15.5).<sup>2</sup>

*Young (first plumage)*.—No blue on head or neck; upper parts, except wings and tail, plain grayish olive, darker on back; under parts much paler olive, tinged with yellow posteriorly; wings and tail as in adults, but remiges, etc., and rectrices duller black, or dusky, the secondaries with the basal yellow less pure and less sharply defined.

Southern Mexico, in states of Tamaulipas (Alta Mira), Vera Cruz (Jalapa; Cordova; Orizaba), Mexico (valley of Mexico), Oaxaca, etc.,

<sup>1</sup> Ten specimens.

<sup>2</sup> Four specimens.

Specimens from different localities average as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Six adult males from eastern Mexico.....	99.8	70.1	11.7	7.9	22.1	16.5
Two adult males from Guatemala .....	94.2	65.8	11.9	7.9	21.3	15.7
Two adult males from Honduras .....	96	66	12.7	7.6	21.8	15
<b>FEMALES.</b>						
Two adult females from eastern Mexico.....	95.3	66.5	12.2	7.9	22.1	15.7
Two adult females from Honduras .....	95	66.8	13	8.1	21.6	15.5

I am unable to discover any color difference between specimens from extreme points of the range of the species.

southward through Guatemala, British Honduras and Honduras to the Segovia River.

*Tanagra abbas* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1831, 2 (Mexico; coll. Berlin Mus.); Journ. für Orn., 1863, 57.—SCLATER, Proc. Zool. Soc. Lond., 1856, 235 (monogr.; Cordova and Orizaba, Vera Cruz; Honduras; Guatemala), 303 (Cordova); 1858, 358 (Lake of Yojoa Honduras); 1859, 364 (Jalapa, Vera Cruz), 378 (Teotalcingo and Villa Alta, Oaxaca); 1864, 173 (valley of Mexico); Synop. Av. Tanagr., 1856, 61; Cat. Am. Birds, 1862, 76 (Mexico); Cat. Birds Brit. Mus., xi, 1886, 162 (Orizaba and Jalapa, Vera Cruz; Belize, Brit. Honduras; Cahabon, Coban, Chisee, Dueñas, and Retalhuleu, Guatemala; San Pedro, Honduras).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 550 (hot and temperate regions Vera Cruz, up to 4,000 ft.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 836 (San Pedro, Honduras).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 19 (Guichicovi, Oaxaca).—SALVIN, Cat. Strickland Coll., 1882, 189 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 278. —FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 140 (Jalapa, Vera Cruz).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1887, 580 (Truxillo, Honduras), 585 (Segovia R., Honduras).—RICHMOND, Proc. U. S. Nat. Mus., xviii, 1896, 631 (Alta Mira, Tamaulipas).—CHAPMAN, Bull. Am. Mus. N. H., x, 1896, 27 (Jalapa).

[*Tanagra*] *abbas* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.

*Tanagra (Aglan) vicaria* LESSON, Cent. Zool., 1831, 206, pl. 68 (Mexico).

*Tanagra vicaria* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 116 (Guatemala); Consp. Av., i, 1850, 238; Rev. et Mag. de Zool., iii, 1851, 171; Note sur les Tang., 1851, 22.—SCLATER and SALVIN, Ibis, 1859, 16, pl. 5, fig. 1, egg Dueñas, Guatemala; descr. eggs). MOORE, Proc. Zool. Soc. Lond., 1869, 59 (Belize, British Honduras).—TAYLOR, Ibis, 1860, 111 (Lake Yojoa, Honduras).

*Th[raupis] vicaria* CARANIS, Mus. Hein., i, 1850, 29 (Mexico).

#### Genus SPINDALIS Jardine and Selby.

*Spindalis* JARDINE and SELBY, Illustr. Orn., new ser., 1836, pl. 9. (Type, *S. bil*)

then nearly straight or faintly concave, more or less convex beneath nasal fossæ; mandibular tomium first a little concave, then more or less convex to about the middle, thence nearly straight to the slight subbasal angle. Nostril exposed, broadly horizontally oval, with rather broad superior membrane. Rictal bristles obvious but not conspicuous. Wing a little less than four to about four and one-third times as long as tarsus, rather pointed (ninth to sixth or eighth to fifth primaries longest, the ninth longer than fifth); primaries exceeding secondaries by a little less to a little more than length of tarsus. Tail shorter than wing by less than length of tarsus, slightly divaricate and emarginate, the rectrices rather narrow, with firm webs and rounded or very slightly pointed tips. Tarsus less than twice as long as exposed culmen, equal to or slightly exceeding middle toe with claw; lateral claws scarcely reaching to base of middle claw; hind claw decidedly shorter than its digit, strongly curved.

*Coloration*.—Adult males with head black, relieved by broad superciliary and malar stripes of white; wings and tail black, conspicuously marked with white; under parts with more or less yellow or orange, or both, sometimes with chestnut on chest; throat black laterally, white or yellow centrally or medially. Females and young much duller, with black replaced by olivaceous, the head without conspicuous (if any) stripes.

*Range*.—Greater Antilles (Bahamas, Cuba, Haiti, Porto Rico, Jamaica, Grand Cayman) and Cozumel Island, Yucatan.

*S. pretrei* has been separated generically, doubtless on account of its slender bill, which is very different in form from that of *S. nigricapala* and *S. benedicti*; but other species are intermediate, and I can see no good reason for subdividing the genus.

#### KEY TO THE SPECIES AND SUBSPECIES OF SPINDALIS.

- a. Head black, with conspicuous white superciliary and malar stripes. (Adult males.)
  - b. Rump yellowish olive-green, similar to back, but slightly more yellowish; inner webs of lateral rectrices not extensively white.
    - c. Larger (wing 92.2–100.6); hindneck olive-green, like back; lesser wing-coverts black; abdomen and flanks yellow. (Jamaica.)  
*Spindalis nigricapala*, adult male (p. 64)
    - cc. Smaller (wing 82.5–87.6); hindneck orange, forming a sharply defined collar; lesser wing-coverts chestnut; abdomen white, flanks grayish olive-green, indistinctly streaked with darker. (Porto Rico.)  
*Spindalis portoricensis*, adult male (p. 65)
  - bb. Rump rufous-orange, orange-rufous, or chestnut very different from color (olive-green or black) of back; inner webs of lateral rectrices extensively white.
    - c. Bill more slender (depth at base much less than distance from nostril to tip of maxilla); nuchal collar yellow or rufous-orange; whole rump rufous-orange or orange-rufous.
      - d. Nuchal collar yellow; upper tail-coverts chestnut or chestnut-rufous; chest chestnut. (Haiti.) ..... *Spindalis multicolor*, adult male (p. 67)



- dd.* Nuchal collar rufous-orange; upper tail-coverts rufous-orange, like rump; chest rufous-orange. (Cuba; Isle of Pines.)
- Spindalis pretrei*, adult male (p. 68)
- cc.* Bill stouter (depth at base nearly equal to distance from nostril to tip of maxilla); nuchal collar chestnut, at least the upper portion; upper rump olive-green or black, like back; lower rump chestnut.
- d.* Smaller (wing 73.4-81.0, tail 57.9-65.0); bill much narrower (depth at base 6.1-7.9). (*Spindalis zena*.)
- c.* Back and scapulars uniform black (rarely very slightly mixed with olive-green). (Bahamas, except Abaco island.)
- Spindalis zena zena*, adult male (p. 70)
- cc.* Back and scapulars dark yellowish olive, or at least much mixed with this color or olive-yellowish. (Abaco Island, Bahamas.)
- Spindalis zena townsendi*, adult male (p. 72)
- dd.* Larger (wing 76.2-86.4, tail 63.0-68.1); bill much stouter (depth at base, 7.6-9.9); back and scapulars always yellowish olive.
- c.* Median throat-stripe lemon yellow; lower rump chestnut. (Cozumel Island, Yucatan) ..... *Spindalis benedicti*, adult male (p. 73)
- cc.* Median throat-stripe "yellowish orange;" lower rump "brownish orange." (Island of Grand Cayman, Caribbean Sea.)
- Spindalis salvini*, adult male (p. 74)
- aa.* Head olive-grayish, without distinct (if any) white superciliary or malar stripes. (Adult females.<sup>1</sup>)
- b.* Larger (wing 97.8, tail 74.7); abdomen yellow.
- Spindalis nigricapilla*, adult female (p. 65)
- bb.* Smaller (wing less than 85.1, tail less than 66); abdomen not yellow.
- c.* Under parts streaked..... *Spindalis portoricensis*, adult female (p. 66)
- cc.* Under parts not streaked.
- d.* Larger (wing 76.2-81.5, tail 59.9-63.5); bill stouter (depth at base 7.6-8.1).
- Spindalis benedicti*, adult female (p. 73)
- dd.* Smaller (wing 68.6-76, tail 53.3-60.7), bill more slender (depth at base not more than 7.4).
- c.* Larger (wing 71.1-76.4, averaging more than 72.4; tail 53.3-60.7, averaging 57.4; bill stouter, averaging 7.1-7.4). Base, depth, color

slightly tinged with olive laterally, especially on flanks; anal region and under tail-coverts white, the feathers grayish basally; axillars and under wing-coverts white, slightly tinged with yellow; wings and tail black, the greater coverts and tertials broadly, the other secondaries and the primaries narrowly, margined with white; inner webs of lateral rectrices with a large terminal blotch of white on inner half; maxilla black, mandible bluish gray with blackish tip; legs and feet grayish dusky (bluish gray in life?); length (skins), 165.1–186.7 (177); wing, 92.2–100.6 (97.3); tail, 71.6–79.2 (75.7); exposed culmen, 12.2–14 (13.5); depth of bill at base, 8.1–8.4 (8.4); tarsus, 21.8–23.9 (22.6); middle toe, 15.2–16.8 (16.3).<sup>1</sup>

*Adult female*.—Pileum and sides of head plain dull olive-grayish, the feathers with indistinctly darker margins; chin, throat, and sides of neck plain light brownish gray; otherwise like the adult male, but lesser and middle wing-coverts greenish olive, black of greater coverts, remiges, primary coverts, and tail duller (the last with middle pair of rectrices dusky brownish gray), yellowish olive-green of upper parts duller, and yellow of under parts slightly less intense; white terminal patch of inner web of lateral rectrices smaller; length (skin), 181.6; wing, 97.8; tail, 74.7; exposed culmen, 13.5; depth of bill at base, 8.1; tarsus, 22.9; middle toe, 16.8.<sup>2</sup>

Island of Jamaica, Greater Antilles.

*Tanagra nigricephala* JAMESON, Edinburgh New Philos. Journ., xix, 1835, 213 (Jamaica); L'Institut, iii, 1835, 316.—GOSSE, Illustr. Birds Jamaica, 1849, pl. 56.

[*Spindalis*] *nigricephala* BONAPARTE, Consp. Av., i, 1850, 240.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.—CORY, List Birds W. I., 1885, 11.

*Spindalis nigricephala* SCLATER, Proc. Zool. Soc. Lond., 1856, 230 (monogr.); 1861, 74; Synop. Av. Tanagr., 1856, 56; Cat. Am. Birds, 1862, 77, excl. syn. part; Cat. Birds Brit. Mus., xi, 1886, 166 (Moneague and Spanishtown, Jamaica).—ALBRECHT, Journ. für Orn., 1862, 196.—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 296.—CORY, Auk, iii, 1886, 198 (synonymy; descr.); Birds W. I., 1889, 85; Cat. W. I. Birds, 1892, 16, 114, 130.—SCOTT, Auk, x, 1893, 180.

*S[spindalis] nigricephala* A. and E. NEWTON, Handb. Jamaica, 1881, 104.

*Spindalis bilineatus* JARDINE and SELBY, Illustr. Orn., new ser., 1836, pl. 9.

*Tanagra zena* (not *Fringilla zena* Linnaeus) GOSSE, Birds Jamaica, 1847, 231.

*Tanagra zenoides* DES MURS, Icon. Orn., 1847, pl. 40.

## SPINDALIS PORTORICENSIS (Bryant).

### PORTO RICAN SPINDALIS.

*Adult male*.—Pileum and sides of head black, relieved by a white superciliary stripe (extending to nape) and a white malar stripe (sometimes also a small white spot in middle of forehead); a large black space on each side of lower throat; back, scapulars, rump, and upper

<sup>1</sup> Five specimens.

<sup>2</sup> One specimen.

tail-coverts plain olive-green, more yellowish posteriorly; a conspicuous collar of orange, commencing at posterior end of the white malar stripe and extending thence across sides of neck and hindneck; lesser wing-coverts chestnut-rufous; middle coverts olive-green; rest of wing dull blackish or dusky, the greater coverts and secondaries (especially the tertials) edged with grayish white, the secondaries sometimes edged with olive-greenish basally; outer webs of primaries more or less extensively white at base, this sometimes entirely concealed by primary coverts, sometimes extending beyond them; tail olive-dusky (the middle pair of rectrices paler, more olive or olive-grayish), with edges of rectrices olive-greenish basally, grayish terminally; inner webs of lateral rectrices usually edged terminally with white; chin and sides of upper throat white, flecked with black; median portion of throat (more or less broadly) clear yellow, passing into cadmium orange on median portion of foreneck (between posterior half, approximately, of the lateral black spaces); chest, breast, upper abdomen, and anterior portion of sides yellow (lemon or gamboge) tinged with olive laterally; rest of under parts white medially, light grayish olive or olive-grayish laterally, the flanks indistinctly streaked with darker; under tail-coverts with a central (mostly concealed) sagittate space of olive-grayish; maxilla black, mandible grayish (bluish gray or plumbeous in life); iris dark reddish brown<sup>1</sup>; legs and feet grayish dusky (plumbeous in life<sup>1</sup>); length (skins), 147.3-168.9 (157); wing, 82.6-87.4 (84.6); tail, 61.7-68.6 (64.8); exposed culmen, 11.4-13 (12.2); depth of bill at base, 7.6-8.9 (8.1); tarsus, 18.8-21.6 (20.1); middle toe, 14-15.5 (15).<sup>2</sup>

*Adult female*.—Very different from the male. Above plain grayish olive, the rump, upper tail-coverts, edges of rectrices (basally),



13.2 (12.4); depth of bill at base, 7.4–8.1 (7.6); tarsus, 20.1–22.1 (20.6); middle toe, 13–15.2 (14.5).<sup>1</sup>

*Immature male*.—Similar to the adult male, but black of head replaced by olive, more or less blotched or mixed with black; white head-stripes less distinct, less purely white; orange patch on foreneck absent or slightly indicated, and yellow of breast, etc., paler; orange nuchal collar narrower, more yellow; wings and tail much as in adult female.

#### Island of Porto Rico, Greater Antilles.

*Tanagra portoricensis* BRYANT, Proc. Bost. Soc. Nat. Hist., x, 1866, 252 (Porto Rico).

[*Spindalis*] *portoricensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.—CORY, List Birds W. I., 1885, 11.

*Spindalis portoricensis* GUNDLACH, Journ. für Orn., 1874, 311; 1878, 159, 168; Anal. Soc. Esp. Hist. Nat., vii, 1878, 188.—CORY, Auk, iii, 1886, 197 (synonymy; descr.); Birds W. I., 1889, 84 (do.); Cat. W. I. Birds, 1892, 16, 114, 132.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 167.

*Tanagra (Spindalis) portoricensis* SUNDEVALL, Öfv. K. Vet.-Ak. Förh. Stockh., 1869, 596.

#### SPINDALIS MULTICOLOR (Vieillot).

##### HAITIAN SPINDALIS.

*Adult male*.—Pileum and sides of head black, relieved by a superciliary stripe and broader malar stripe of white, the former extending to the nape; chin and upper throat also white; entire hindneck and sides of neck rich yellow (indian yellow); back yellowish olive-green, the scapulars similar but darker and somewhat mixed with dusky anteriorly; whole rump orange-tawny, becoming yellowish next to olive-green of back, the upper tail-coverts rather deeper orange-tawny, sometimes inclining to yellowish chestnut; lesser wing-coverts chestnut; rest of wings black, the middle coverts narrowly margined with olive-green, the greater coverts and tertials broadly edged with white, the other secondaries and the primaries more narrowly edged with white, the latter (except the outermost) white at base of outer web, forming a more or less extensive patch; tail black, the outermost rectrix with about the terminal half of inner web white (except at tip), the corresponding part of outer web also mostly white; next rectrix with a similar but slightly shorter patch of white on inner web; third with a large terminal or subterminal spot of white; median line of lower throat canary yellow, bordered along each side by a large patch of black (narrow and pointed anteriorly, broad and rounded posteriorly), extending posteriorly much beyond the yellow, or as far as the posterior extremity of the white malar stripe; space between posterior half of these black patches, extending considerably upon median portion of chest, chestnut; sides of chest, whole breast, and upper abdomen bright yellow (lemon or gamboge); lower abdomen, anal region,

<sup>1</sup> Seven specimens.

and under tail-coverts white, the last with concealed basal portion of the feathers abruptly gray; flanks light grayish olive, indistinctly streaked with darker; maxilla black; mandible paler (bluish gray in life?); legs and feet dusky (bluish gray in life?); length (skins), 157.5; wing, 83.1-86.4 (84.6); tail, 69.9-71.9 (70.9); exposed culmen, 10.7-11.2 (10.9); depth of bill at base (one specimen), 5.8; tarsus, 20.8-21.1; middle toe, 13.7.<sup>1</sup>

*Adult female*.—"Olive on the back and yellowish on the rump; under parts grayish, whitening at the vent" (CORY). "Above olive; back slightly striated; wings and tail blackish brown, edged with olive; outer margins of wing-coverts whitish; beneath grayish white, clearer on the belly, with blackish shaft-stripes on the breast" (SCLATER).

Island of Haiti, Greater Antilles.

*T[anagra] multicolor* VIEILLOT, Enc. Méth., ii, 1823, 775 ("Florides, les Iles Bahama et de Saint-Domingue").

*Tanagra multicolor* VIEILLOT, Gal. Ois., i, 1834, 100, pl. 76.

*[Spindalis] multicolor* BONAPARTE, Consp. Av., i, 1850, 240.—SCLATER and SALISBURY, Nouv. Av. Neotr., 1873, 21. CORY, List Birds W. I., 1885, 11.

*Spindalis multicolor* SCLATER, Proc. Zool. Soc. Lond., 1856, 230 (monogr.); Synop. Av. Tanagr., 1856, 57, Cat. Birds Brit. Mus., xi, 1886, 167. SALLÉ, Proc. Zool. Soc. Lond., 1857, 231.—CORY, Bull. Nutt. Orn. Club, vi, 1881, 182 (Haiti); Birds Haiti and San Dom., 1885, 54, pl. (7); Auk, iii, 1886, 126 (synonymy, desert.). Birds W. I., 1889, 83 (do.); Cat. W. I. Birds, 1892, 16, 114, 131. CHERRIE, Contr. Orn. San Dom., 1896, 13 (Catara and Aguacate, Santo Domingo; crit.).

*Tanagra dominicensis* BRYANT, Proc. Bust. Soc. N. H., xi, 1866, 92 (St. Domingo; crit.).

#### SPINDALIS PRETREI (Lesson).

##### CUBAN SPINDALIS.

Similar to *S. multicolor*, but bill still more slender; adult male with

coverts white, the last with concealed basal portion of longer feathers abruptly gray; back and scapulars plain yellowish olive-green; rump tawny-orange or orange-tawny, more yellowish toward back; upper tail-coverts black basally, gray and olive-greenish terminally; lesser wing-coverts orange-chestnut; middle coverts black, broadly tipped with olive-green; rest of wings black, the greater coverts and tertials broadly edged with white, the other secondaries more narrowly edged with white or pale yellowish, the primaries still more narrowly edged with white or very pale grayish, the longer primaries with basal portion of outer webs white, forming more or less of a patch beyond tips of primary coverts; tail black, with more than terminal half of inner web of lateral rectrix white, the second with a little less white (about the terminal half), the third with a large white terminal space; inner webs of middle rectrices broadly edged with white; maxilla black, mandible bluish gray; legs and feet blackish gray (bluish gray in life?); length (skins), 132.1–147.3 (138.2); wing, 70.6–74.9 (73.4); tail, 53.8–58.2 (56.1); exposed culmen, 10.7–11.4 (10.9); depth of bill at base, 5.6–6.4 (5.8); tarsus, 17.5–19.6 (18.8); middle toe, 13.2–14.5 (13.5).<sup>1</sup>

*Adult female*.—Very different in coloration from the male. Above (including pileum, sides of head, and hindneck) plain olive, becoming slightly lighter on rump; beneath much paler olive, slightly tinged with yellowish, the chin and a broad but not very distinct malar stripe whitish; abdomen, anal region, and under tail-coverts white, tinged with yellowish, the last with concealed portion abruptly brownish gray; wings and tail dusky, the greater wing-coverts and tertials broadly edged with white, very pale gray, or olive-whitish, the secondaries edged with light olive, the primaries very narrowly edged with pale gray, and the rectrices rather broadly edged with greenish olive; inner webs of two lateral rectrices with an indistinct paler space or blotch near tip; bill, legs, and feet as in adult male; length (skins), 133.4–142.2 (140); wing, 68.6–71.1 (70.1); tail, 50.8–54.1 (52.6); exposed culmen, 10.7–12.2 (11.4); depth of bill at base, 5.3–5.8 (5.6); tarsus, 17.5–19.6 (18.3); middle toe, 12.7–14 (13.5).<sup>2</sup>

Island of Cuba (including the Isle of Pines),<sup>3</sup> Greater Antilles.

<sup>1</sup> Seven specimens.

<sup>2</sup> Five specimens.

<sup>3</sup> Three adult males from the Isle of Pines, although in somewhat worn plumage, appear to be identical in coloration with Cuban specimens, but are somewhat larger.

Average measurements are as follows:

Locality.	Wing.	Tail.	Exposed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
Seven adult males from Cuba.....	73.4	56.1	10.9	5.8	18.8	13.5
Three adult males from Isle of Pines .....	75.7	58.4	11.9	6.1	19.1	13.7

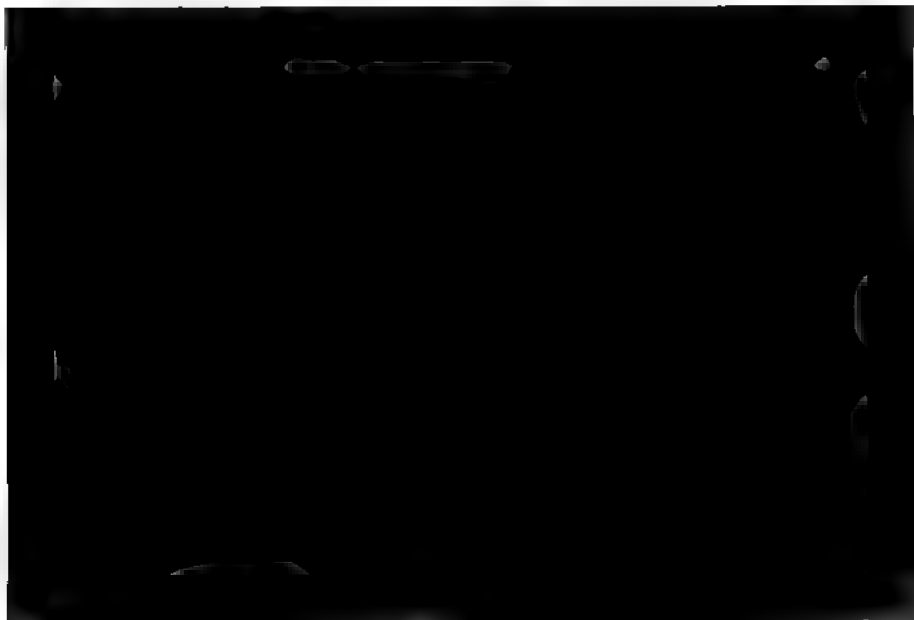
With the exception of a pair from Monte Verde, all the specimens examined are from western Cuba. No females from the Isle of Pines have been seen by me.

- Tanagra pretrei* LESSON, Cent. Zool., 1831, 122, pl. 45 ("Brazil").—LAFFRANQUE, Rev. Zool., 1839, 103 (Cuba; crit.).
- T[anagra] pretrei* GRAY, Gen. Birds, ii, 1844, 365.
- [Spindalis] pretrei* BONAPARTE, Consp. Av., i, 1850, 248.
- Spindalis pretrei* GUNDLACH, Journ. für Orn., 1855, 476; 1861, 328; 1862, 189; 1872, 419; Repert. Fisico-Nat. Cuba, i, 1866, 237.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307.—CORY, Auk, iii, 1886, 196 (synonymy; descr.); Birds W. I., 1889, 83 (do.).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 309 (Trinidad, Cuba).
- Spindalis pretrei* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 168 (San Cristobal, Cuba).—CORY, Cat. W. I. Birds, 1892, 16, 114, 129.
- [Spindalis] pretrei* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.—CORY, List Birds W. I., 1885, 11.
- Tanagra (Spindalis) pretrei* GUNDLACH, Journ. für Orn., 1871, 266, 275.
- Tanagra zena* (not *Fringilla zena* Linnaeus) VIGORS, Zool. Journ., iii, no. xi, Dec, 1827, 441 (Cuba).—D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1832, 65, excl. syn. part, pl. 11.
- T[anagra] zena* GRAY, Gen. Birds, ii, 1844, 365 part.
- Spindalis zena* SCLATER, Proc. Zool. Soc. Lond., 1856, 231 (monogr.); Synop. Av. Tanagr., 1856, 57, part (Cuba).

#### SPINDALIS ZENA ZENA (Linnaeus).

##### BLACK-BACKED SPINDALIS.

*Adult male*.—Pileum and sides of head black, relieved by a broad superciliary stripe (extending to nape) and a still broader malar stripe of white; chin white; a band across hindneck (extending across sides of neck to posterior extremity of white malar stripe) chestnut, becoming lighter and more yellowish (sometimes dull orange-yellow) posteriorly; back and scapulars uniform black (rarely slightly intermixed with olive-greenish); upper rump dull yellowish (gallstone or ocher yel-



clouded with blackish, rarely with these broad black streaks very heavy; abdomen and under tail-coverts white, the last with concealed subbasal spots of dusky; maxilla black, mandible bluish gray with blackish tip; legs and feet grayish dusky (bluish gray in life?); length (skins), 137.2–152.4 (147.3); wing, 73.4–81 (77.5); tail, 57.9–65 (61.5); exposed culmen 9.7–13 (11.4); depth of bill at base, 6.1–7.9 (6.9); tarsus, 18.3–20.3 (19.8); middle toe, 13–15 (14.2).<sup>1</sup>

*Adult female.*<sup>2</sup>—Above plain, rather light, olive or olive-grayish, the feathers of the pileum very indistinctly darker centrally; wings and tail dusky, the greater wing-coverts and tertials broadly edged with dull whitish or very pale olive, the secondaries more narrowly edged with pale olive, the primaries with outer webs narrowly edged with pale grayish or grayish white and abruptly white at base, forming a more or less extensive spot or patch; rectrices edged (quite broadly toward base) with light greenish olive; sides of head like upper parts, sometimes with an indistinct paler superciliary stripe, the auricular region with narrow paler shaft-streaks; under parts very pale olive or olive-grayish (sometimes faintly tinged with yellowish), the chin, malar region, lower abdomen, anal region, and under tail-coverts whitish (the last sometimes inclining to buffy); throat sometimes with a median space of pale dull yellowish; maxilla blackish, mandible grayish with dusky tips; legs and feet grayish dusky; length (skins), 129.5–149.9 (143.3); wing, 72.4–76.5 (74.2); tail, 53.8–60.7 (56.9); exposed culmen, 10.9–12.7 (11.7); depth of bill at base, 7.4–7.6 (7.4); tarsus, 17.8–20.3 (19.6); middle toe, 13–15 (13.5).<sup>3</sup>

<sup>1</sup> Eighteen specimens.

<sup>2</sup> The female of this species is very similar in coloration to that of *S. pretrei*, but is decidedly grayer and has the bill much stouter.

<sup>3</sup> Eight specimens.

Average measurements of specimens from different islands are as follows:

Locality.	Wing.	Tail.	Exposed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Seven adult males from New Providence Island ...	77.2	61.2	11.4	6.6	20.1	14.2
Eight adult males from Eleuthera Island .....	77.7	62	11.9	7.1	19.6	14
Three adult males from San Salvador (Cat Island) ..	76.7	60.5	11.2	6.6	20.1	14.2
<b>FEMALES.</b>						
Five adult females from New Providence Island...	74.2	56.6	11.7	7.4	19.6	13.5
One from San Salvador (Cat Island) .....	73.7	57.2	.....	.....	19.1	13
One from Green Cay .....	73.7	56.6	11.9	7.4	20.3	15
One from Eleuthera Island .....	74.9	57.2	11.4	.....	19.8	13.2

I regret the necessity of reducing to a synonym of *S. zena zena* the *S. z. stejnegeri* of Cory, but can not avoid it. Among eight adult males from Eleuthera Island only three show the characters of the supposed subspecies, even in part; while of seven from New Providence three are nearly typical *S. z. stejnegeri*.



Bahama Islands, except island of Abaco. (Recorded from Berry Islands, Eleuthera, New Providence, Andros, San Salvador, Long Island, Green Cay, and Mariguana islands.)

[*Fringilla*] *zena* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 320 (based on *Bahama Finch*, *Fringilla bahamensis* Catesby, Nat. Hist. Carolina, i, pl. 42).

*T[amagra]* *zena* GRAY, Gen. Birds, ii, 1844, 365, part.

*Tamagra zena* BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 111 (New Providence, Bahamas).

[*Spindalis*] *zena* BONAPARTE, Consp. Av., i, 1850, 240.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.—CORY, List Birds W. I., 1885, 11.

*Spindalis zena* SCLATER, Proc. Zool. Soc. Lond., 1856, 231, part, excl. syn. part; Cat. Birds Brit. Mus., xi, 1886, 169 (Nassau, New Providence, Bahamas).—CORY, Birds Bahama I., 1880, 92; Auk, iii, 1886, 195 (synonymy; descr.); viii, 1891, 294 (New Providence), 295 (Berry Islands); ix, 1892, 48 (Mariguana). Birds W. I., 1889, 82 (do.); Cat. W. I. Birds, 1892, 16, 114, 127 (Berry Islands, New Providence, Andros, San Salvador, Long I., Green Cay, and Mariguana, Bahamas).—NORTHRUP, Auk, viii, 1891, 70 (Andros I.; food, etc.).—RINGWAY, Auk, viii, 1891, 335 (New Providence), 336 (Eleuthera I.), 337 (Cat I. or San Salvador), 339 (Green Cay).

*Spindalis zena stejnegeri* CORY, Auk, viii, Oct., 1891, 348, 351 (Eleuthera Island, Bahamas; coll. C. B. Cory); Cat. W. I. Birds, 1892, 16, 114, 126, 152 (Eleuthera; San Salvador?).

#### SPINDALIS ZENA TOWNSENDI Ridgway.

##### ABACO SPINDALIS.

Similar to *S. z. zena*, but adult male with back either wholly olive or much mixed with that color, instead of uniform black, the adult female more decidedly olive or olive-greenish.

*Adult male*.—Length (skins), 149.9–162.6 (154.7); wing, 74.2–78.7 (76.7); tail, 61.2–62.7 (62); exposed culmen, 11.7–12.2 (11.9); depth of

*Adult male*.—Pileum and sides of head black, relieved by a broad superciliary stripe (extending to nape) and broader malar stripe of white; chin white; throat with a median stripe of bright yellow, inclosed between two broad lateral stripes (narrower and more pointed anteriorly, broader and rounded or subtruncate posteriorly) of black; space between posterior portion of these black lateral throat-stripes, more or less of the chest, sides of neck, and band across hindneck chestnut, the nuchal collar broken below by deep olive-yellowish tips to the feathers; back and scapulars deep yellowish olive-green, passing into olive-yellowish on upper rump and this into chestnut on lower rump; feathers of lower hindneck and upper back with a concealed black transverse spot or bar, separating the terminal yellowish olive-green or olive-yellowish portion from the basal gray part; scapulars sometimes partly blackish; upper tail-coverts black, with tips sometimes extensively gray or olive; lesser wing-coverts chestnut; middle coverts black, narrowly margined at tips with yellowish olive-green; rest of wing black, the greater coverts and tertials broadly, the other secondaries more narrowly, the primaries very narrowly, edged with white; primaries (except outermost) with outer webs abruptly white at base, forming a more or less extensive spot or patch; tail black, the outer webs of rectrices very narrowly edged with white, inner web of middle pair broadly edged with white, and inner webs of two outermost extensively white terminally (nearly the terminal half on outermost rectrix), the third sometimes with a white spot at tip of inner web; outer web of lateral rectrix mostly white; breast and upper abdomen rich yellow (lemon, sometimes approaching indian, yellow); lower abdomen, anal region, and under tail-coverts white, the last with a large concealed spot of grayish on each web; sides and flanks light grayish olive; maxilla black, mandible grayish (bluish gray in life ?) with dusky tip; legs and feet grayish dusky (bluish gray in life ?); length (skins), 152.4–165.1 (159); wing, 76.2–86.4 (81.5); tail, 63–68.1 (66); exposed culmen, 12.2–12.4 (12.2); depth of bill at base, 7.6–8.9 (8.1); tarsus, 20.6–22.6 (21.1); middle toe, 14.5–15.2 (15).<sup>1</sup>

*Adult female*.—Similar in coloration to the same sex of *S. zena townsendi*, but larger and bill much stouter. Above plain olive; wings dusky, the greater coverts and tertials edged with whitish or very pale olive, the other secondaries edged with light greenish olive, the primaries with pale grayish; primaries with basal portion of outer webs white, forming a small spot; tail dusky or dark olive-grayish with light greenish olive edgings, the inner webs of lateral rectrices margined terminally with white; under parts pale olive, paler and more grayish on chin and malar region, the abdomen, anal region, and under tail-coverts whitish or yellowish white, the longer under tail-coverts largely pale olive or light grayish brown; bill, legs, and feet as in the

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<sup>1</sup> Six specimens.

male; length (skins), 144.8-165.1 (153.7); wing, 76.2-81.5 (78.2); tail, 58.9-63.5 (61.5); exposed culmen, 12.2-12.9 (12.7); depth of bill at base, 7.6-8.1 (7.9); tarsus, 19.3-21.6 (20.6); middle toe, 14.5-15.2 (14.7).<sup>1</sup>

Island of Cozumel, Yucatan.

*Spindalis benedicti* RIDGWAY, Proc. Biol. Soc. Wash., iii (pub. Mar.), 1885, 21 (Cozumel I., Yucatan; coll. U. S. Nat. Mus.); Proc. U. S. Nat. Mus., viii, 1885, 567 (detailed descr.).


*Spindalis exul* SALVIN, Ibis, 5th ser., iii, Apr., 1885, 189, pl. 5 (Cozumel; coll. Salvin and Goldman).

#### SPINDALIS SALVINI Cory.

##### SALVIN'S SPINDALIS.

Similar to *S. benedicti*, but median throat-stripe "yellowish orange" instead of yellow, and lower rump "brownish orange" instead of chestnut.

*Adult male*.—"Top of the head and cheeks black; a superciliary and malar stripe of white; a patch of yellowish orange on the upper throat, separated from the white malar stripe by a line of black which reaches the breast; chin dull white; lower throat and breast chestnut; back dark olive, separated from the black of the head by a chestnut collar; lower back yellowish; a patch of chestnut on the carpus; rump brownish orange; belly and under tail-coverts dull white; tail black, the two outer feathers heavily marked with white; the third feather tipped with white on the inner web, the two central feathers narrowly edged with white on the inner webs; bill horn color, feet slate brown.



## Genus PIRANGA Vieillot.

*Piranga* VIEILLLOT, Ois. Am. Sept., i, 1807, p. iv. (Type, *Muscicapa rubra* Linnæus.)

*Pyranga* (emendation) VIEILLLOT, Analyse, 1816, 32.

*Phœnisoma* SWAINSON, Classif. Birds, ii, 1837, 284. (Type, by elimination, *Tanagra rubra* Linnæus, = *Pyranga erythromelas* Vieillot.)

*Phœnicosoma* (emendation) CABANIS, Mus. Hein., i, 1850, 24.

Medium sized or rather small Tanagers with exposed culmen not shorter than middle toe, without claw; bill rather stout to very stout, more or less swollen, the maxillary tomium with more or less of a median tooth or else the plumage unicolored (red in adult males, yellowish in adult females and young); adult males with at least the head red.

Bill subconical, decidedly longer than broad or deep at base, the culmen more or less strongly curved and uncinatè at tip; exposed culmen less than two-thirds to nearly as long as tarsus, distinctly ridged, gradually convex from base or nearly straight for basal half or more; gonys nearly (sometimes quite) twice as long as mandibular rami, nearly as long as maxilla from nostril, nearly or quite straight; maxillary tomium distinctly notched subterminally, then gently concave or nearly straight, usually with a more or less distinct tooth-like projection in or near middle portion; mandibular tomium nearly straight, or somewhat convex near tip, the basal portion rather abruptly deflected, or sometimes even distinctly angulated. Nostril exposed, rather large, oval or roundish, sometimes slightly pointed anteriorly, in anterior end of nasal fossæ. Rictal bristles obvious but not conspicuous. Wing moderate or long (about three and two-thirds to five and one-third times as long as tarsus), pointed (ninth to seventh or sixth primaries longest, the ninth longer than sixth) or rounded (eighth to fifth primaries longest, ninth shorter than fourth); primaries exceeding secondaries by more than length of tarsus, except in round-winged species. Tail shorter than wing by not less than half length of tarsus, sometimes by much more than length of tarsus; emarginate, even or slightly rounded, slightly divaricate terminally, the rectrices of medium width, rounded at tips. Tarsus equal to or longer than middle toe with claw; lateral claws reaching about to base of middle claw, or falling slightly short; hind claw decidedly shorter than its digit, strongly curved.

*Coloration*.—Adult males with more or less of red (sometimes wholly red) with or without black wings and tail, the wings sometimes with white, yellow, or reddish bands. Adult females with red replaced by olive-greenish above, yellowish beneath, the wing pattern as in the male. Young streaked beneath (always?) in first plumage.

*Range*.—Temperate North America southward through Mexico and Central America and tropical South America to Argentina, Bolivia, and Peru.

The species with longer and more pointed wing comprise all except *P. leucoptera*, *P. ardens*, *P. erythrocephala*, and *P. roseo-gularis*. These latter differ further in having a shorter and more turgid bill, especially the two last named; but I am not inclined to consider the differences sufficient to justify generic separation, especially since *P. bidentata* is intermediate with respect to the wing-formula. *P. rubra* is the longest winged member of the genus, and is the only one without a commissural tooth, though this is indicated by a more or less obvious convexity of the maxillary tomium where the usual tooth-like projection is located.<sup>1</sup> *P. erythronelas* comes next in length of wing, and the commissural "tooth," though present, is less developed than in any other species except *P. rubra* and *P. ludoviciana*, the latter agreeing with *P. bidentata* in having the bill more slender than other species, with the culmen nearly or quite straight for the greater part of its length. The commissural tooth is most developed in *P. hepatica*, *P. testacea*, and their allies.

The wing-tip is at least as long as the tarsus and usually much longer in all the species except those with rounded wing and short, turgid bill, in which the distance from the tip of the shortest secondary to that of the longest primary is very much less than the tarsus, in fact but little if any more than half the length of the exposed culmen. In these, too, the tail is much longer in proportion to the wing, but this is due more to abbreviation of the wing than elongation of the tail.

KEY TO THE SPECIES AND SUBSPECIES OF *PIRANGA*.

- ff.* Maxillary tomium with a distinct median "tooth;" color orange-red, or dull orange-vermilion below, grayish red or brownish red above.  
*g* Wing 100.6 or more, averaging 102.6; back grayish red or reddish gray; under parts light orange-red or flame scarlet. (Southwestern United States and plateau of Mexico.)

***Piranga hepatica*, adult male (p. 84)**

- gg.* Wing not more than 99.1, averaging less than 95.2; back brownish red; under parts deep dull orange-red. (*Piranga testacea*.)

- h.* Coloration darker, with ear-coverts deep brownish red like pileum; wings and tail shorter (wing averaging 91.9, tail 75.4). (Nicaragua to Colombia, etc.).

***Piranga testacea testacea*, adult male (p. 86)**

- hh.* Coloration lighter, with ear-coverts more grayish than pileum; wings and tail longer (wing averaging 96.5, tail 78.2). (Guatemala to Honduras.)...***Piranga testacea figlina*, adult male (p. 87)**

- ee.* Wings and tail black; back pure red, like under parts; under wing-coverts white, becoming black on edge of wing. (Eastern North America, south to northern South America in winter.)

***Piranga erythromelas*, adult male in summer (p. 88)**

- dd.* Under parts of body yellow; back not reddish.  
*e.* Back black. (Western United States and British Columbia, south to Guatemala in winter.)

***Piranga ludoviciana*, adult male in summer (p. 91)**

- ee.* Back yellowish olive-green. (Colombia; accidental in California?)

***Piranga rubriceps*, adults (extralimital<sup>1</sup>)**

- cc.* General color olive-greenish above (back sometimes black), yellow below; no red, except sometimes a tinge on forepart of head. (Females and young males.)

- d.* Back olive-green or grayish.

- e.* Wings without yellow bands.

- f.* Under wing-coverts yellow, without dark outer margin.

- g.* Bill light brownish, the mandible paler; maxillary tomium without distinct median tooth. (*Piranga rubra*.)

- h.* Smaller and deeper colored; wing averaging 91.9, tail 70.1, exposed culmen 18.....***Piranga rubra rubra*, adult female (p. 79)**

- hh.* Larger and paler; wing averaging 98.5, tail 78.9, exposed culmen 19.8.....***Piranga rubra cooperi*, adult female (p. 83)**

- gg.* Bill dusky, the mandible more bluish gray; maxillary tomium with a distinct median "tooth."

- h.* Back olive-grayish or light grayish olive-green; under parts pale yellow, becoming pale olive-grayish on flanks.

***Piranga hepatica*, adult female (p. 85)**

- hh.* Back bright yellowish olive-green; under parts deep olive-yellow, the flanks light olive-green. (*Piranga testacea*.)

- i.* Ear-coverts yellowish olive-green, like pileum; wings and tail shorter (wing averaging 84.6, tail 73).

***Piranga testacea testacea*, adult female (p. 87)**

- ii.* Ear-coverts more grayish than pileum; wings and tail longer (wing averaging 87.1, tail 78.7).

***Piranga testacea figlina*, adult female (p. 87)**

<sup>1</sup> *Piranga rubriceps* Gray, Gen. Birds, ii, 1844, 364, pl. 89; Sclater, Cat. Birds Brit. Mus., xi, 1886, 192. (A Colombian species said to have been taken in California; Bryant, Auk, iv, 1877, 78.)

*ff.* Under wing-coverts white, with olive, dusky, or black exterior border.

*g.* Wings and tail black.

*Piranga erythromelas*, adult male in winter (p. 89)

*gg.* Wings and tail dusky grayish with olive-greenish edgings.

*Piranga erythromelas*, adult female and immature male (p. 90)

*ee.* Wings with two yellow (or one yellow and one white) bands.

*f.* Back and tail black... *Piranga ludoviciana*, adult male in winter (p. 92)

*ff.* Back olive-greenish or grayish, tail grayish brown with yellowish olive-green edgings..... *Piranga ludoviciana*, adult female (p. 92)

*bb.* Back streaked with black. (*Piranga bidentata*.)

*c.* General color red or orange (darker above).

*d.* Head, neck, and under parts cadmium orange.

*e.* Smaller (wing averaging 96.3, tail 79.5; white at tip of inner web of lateral rectrices more extended. (Western Mexico.)

*Piranga bidentata bidentata*, adult male (p. 95)

*ee.* Larger (wing averaging 97, tail 80.7); white at tip of inner web of lateral rectrices more restricted. (Tres Marias Islands, western Mexico.)

*Piranga bidentata flammea*, adult male (p. 96)

*dd.* Head, neck, and under parts orange red or scarlet. (Eastern Mexico to Chiriqui.)..... *Piranga bidentata sanguinolenta*, adult male (p. 96)

*cc.* General color yellow, more olive-greenish on upper parts.

*d.* Paler, the back more grayish olive-green; yellow of under parts lighter.

*c.* Smaller (wing averaging 93, tail 77.5, exposed culmen 16; white tip to inner webs of lateral rectrices broader.

*Piranga bidentata bidentata*, adult female (p. 95)

*ee.* Larger (wing averaging 93.7, tail, 80.7, exposed culmen, 17.5; white terminal margin to inner web of lateral rectrices narrower.

*Piranga bidentata flammea*, adult female (p. 96)

*dd.* Deeper colored, the back more yellowish olive-green.

*Piranga bidentata sanguinolenta*, adult female (p. 96)

*aa.* Wing less than four times as long as tarsus; outermost (ninth) primary shorter than fifth.

*b.* Lores grayish; a whitish orbital ring; sides of head, breast, sides, back, and

CLIPPING 2133. (*Piranga erythromelas*.)

- d. General color bright red; wings, scapulars, tail, forehead, lores, and orbits (usually chin also) black.
- e. Wing-bands narrower, the anterior one 3–4.6 wide, the posterior one incomplete (on innermost greater coverts only). (Southern Mexico to British Honduras and Salvador.)

*Piranga leucoptera leucoptera*, adult male (p 99)

- ee. Wing-bands broader, the anterior one 5.1–7.6 wide, the posterior one complete (extending across all the greater coverts). (Costa Rica, Chiriqui, and Veragua.) . . . . . *Piranga leucoptera latifasciata*, adult male (p. 101)

- dd. General color olive-green above, yellow below; wings, scapulars, and tail dusky grayish, more or less tinged or edged with olive-green.

e. Wing bands narrower. . . *Piranga leucoptera leucoptera*, adult female (p. 100)

ee. Wing bands broader. . . *Piranga leucoptera latifasciata*, adult female (p. 101)

- cc. Wing without white bands; edge of wing yellow. (*Piranga erythrocephala*.)

- d. Pileum scarlet; throat and sides of head pinkish red; rest of plumage yellowish olive-green above, bright yellow below. (Mexican plateau.)

*Piranga erythrocephala*, adult male (p. 102)

- dd. Pileum yellowish olive-green, rest of upper parts duller (more grayish) olive-green; under parts dull yellow, much paler posteriorly.

*Piranga erythrocephala*, adult female (p. 102)

### PIRANGA RUBRA RUBRA (Linnaeus).

#### SUMMER Tanager.

*Adult male (summer and winter).*—Above plain dull red (dark dull poppy red), brighter or clearer on pileum, rump, and upper tail-coverts; remiges, primary coverts, and alula grayish brown (hair brown) edged with dull red; under parts clear rich vermilion or poppy red, the axillars and under wing-coverts paler, more pinkish; bill light brownish with paler tomia; iris brown; legs and feet horn color (in dried skins); length (skins), 162.6–182.9 (170.7); wing, 92.5–99.6 (95.5); tail, 71.1–74.7 (72.4); exposed culmen, 16.8–19.3 (17.5); depth of bill at base, 9.4–10.4 (9.9); tarsus, 18.3–19.8 (19.3); middle toe, 12.7–14.7 (14).<sup>1</sup>

*Adult female (summer and winter).*—Above plain yellowish olive-green, more yellowish on pileum, lower rump, and upper tail-coverts, the back and scapulars sometimes tinged with grayish; primaries grayish brown with light yellowish olive-green edgings; lores pale yellowish gray; an indistinct orbital ring of light dull yellow; under parts dull yellow (wax yellow or dull maize yellow), the under tail-coverts purer yellow (chrome yellow); bill and feet as in adult male; length (skins), 165.1–182.9 (173.5); wing, 88.9–95.8 (91.9); tail, 66.5–73.9 (70.1); exposed culmen, 17.5–18.3 (18); depth of bill at base, 9.9–10.7 (10.2); tarsus, 18.5–19.8 (18.8); middle toe, 13.2–14 (13.5).<sup>2</sup>

*Young male in first autumn.*—Similar to the adult female, but more richly colored, the under tail-coverts deep chrome or pale cadmium yellow, the general color of upper parts more ochraceous, with pileum, upper tail-coverts, tail, and edges of primaries tinged with dull orange or orange-ochraceous.

<sup>1</sup> Eight specimens.

<sup>2</sup> Five specimens.



*Young male in nestling plumage.*<sup>1</sup>—Pileum and hindneck dull olive-buffy, distinctly and broadly streaked with dusky; back and scapulars more olivaceous, more broadly and less distinctly streaked with dull grayish dusky; rump pale dull buffy, changing to a more fulvous hue on upper tail-coverts, both distinctly streaked with dusky; tail cinnamon-brown, the edges of the feathers more reddish; middle wing-coverts grayish dusky, broadly margined with light yellowish buff; greater coverts dull grayish, edged with olivaceous and broadly tipped with light yellowish buff, producing a distinct band across wing; secondaries olivaceous, their terminal margins paler and more yellowish, the inner webs dusky; primaries similar, but outer webs becoming orange-brownish basally; auriculars uniform olivaceous; sides of neck dull light buff, streaked with dusky grayish, like nape; under parts white, stained here and there with buffy yellowish, and everywhere streaked, most conspicuously on chest, breast, and sides, with grayish dusky; lower tail-coverts orange-buff, with narrow dusky mesial streaks.

*Young female in nestling plumage.*—Similar to the young male, as described above, but tail olivaceous and edgings to primaries without reddish tinge.

[The only seasonal difference of color in this species is the greater intensity of the colors in autumn and winter, the opposite extreme being represented in midsummer specimens. Immature males are variously intermediate in plumage between the plumage of the adult female and that of the adult male, the relative proportion of red and yellowish varying according to age, several years being required for attainment of the full plumage. Adult females not unfrequently show touches of red, sometimes a considerable amount of this color, but such females may be distinguished from immature males by the lack

*Piranga rubra* VIEILLOT, Ois. Am., Sept., i, 1807, p. iv.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 610.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix., 1886, 140 (Chietla and Huexotitla, Puebla, Dec., Nov.).—CORY, Auk, iii, 1886, 198 (West Indian references); Birds W. I., 1889, 85 (do.); Cat. W. I. Birds, 1892, 114, 131 (New Providence, Bahamas; Cuba).—DUTCHER, Auk, iii, 1886, 442 (Long Island records).—BECKHAM, Auk, iii, 1886, 487 (Bardstown, Kentucky; descr. young male).—ZELEDON, Anal. Mus. Nac., Costa Rica, i, 1887, 110 (Jiménez, San José, San Mateo, Alajuela, etc., Costa Rica; Chiriqui; Panama).—SCOTT, Auk, vi, 1889, 324 (Tarpon Springs, s. w. Florida, breeding; Key West and Punta Rassa, migr.).—MEARNS, Auk, vii, 1890, 55 (Highland Falls, s. e. New York, 1 spec., May 12, 1883).—LOOMIS, Auk, vii, 1890, 125 (Chester County, South Carolina, up to 2,000 ft.).—WARREN, Birds Pennsylvania, 1890, 252 (West Chester, 3 specs., May 25 and Oct. 10).—NORTHROP, Auk, viii, 1891, 70 (Andros I., Bahamas, 1 spec., Apr. 19).—GOSS, Birds Kansas, 1891, 499 (summer resid., rare in w. part).—MCLLWRAITH, Birds Ontario, 1892, 335 (near Hamilton, 1 spec., May, 1885).—KELLS, Trans. Canad. Inst., iii, 1892, 35 (Listowell, County Perth, Ontario, rare).—CHERRIE, Auk, ix, 1892, 25 (San José, Costa Rica, Oct. 7 to Jan. 10).—SAGE, Auk, x, 1893, 303 (Portland, Connecticut, 1 spec., Apr. 28, 1893).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 490 (Rio Escondido, Nicaragua, late Oct. to Apr. 13).—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 30 (Trinidad).—CLARK, Auk, xii, 1895, 306 (Saybrook, Connecticut, 1 spec., Apr. 27).—NEHRLING, Our Native Birds, etc., ii, 1896, 12, pl. 19.—KNIGHT, Bull. Univ. Maine, no. 3, 1897, 104 (Wiscasset, Lincoln County, Maine, 1 spec.).—BUTLER, Birds Indiana, 1897, 988 (north to Vigo, Parke, and Vermilion counties; Brookville).—BANGS, Proc. Biol. Soc., Wash., xii, 1898, 141 (Santa Marta, Colombia).

*P[iranga] rubra* RIDGWAY, Man. N. Am. Birds, 1887, 454.

*Tanagra mississippi* HERMANN, Tab. Aff. Anim., 1783, 214 (based on *Tangara*, du *Mississippi* Buffon, Pl. Enl., pl. 741).

[*Tanagra*] *mississippiensis* GMELIN, Syst. Nat., i, 1788, 889 (based on *Tangara*, du *Mississippi* Buffon, Pl. Enl., pl. 741).—LATHAM, Index Orn., i, 1790, 421.—LICHTENSTEIN, Verz. Doubl., 1823, 30.—BREHM, Handb. Stub. u. Hausvög., 1832, 392.

*P[yranga] mississippensis* MAXIMILIAN, Journ. für Orn., 1858, 272 (crit.; habits).

*Tanagra coccinea* BODDAERT, Tabl. Pl. Enl., 1783, 46 (based on *Tangara*, du *Mississippi* Buffon, Pl. Enl., pl. 741).

*P[yranga] coccinea* GRAY, Gen. Birds, ii, 1844, 363.

[*Loxia*] *virginica* GMELIN, Syst. Nat., i, 1788, 849 (based on *Yellow-bellied Grosbeak* Latham, Gen. Synop. Birds, ii, pt. i, 1783, 125; = male in transition plumage).

*Loxia virginica* DAUDIN, Traité d'Orn., ii, 1800, 383.

[*Tanagra*] *æstiva* GMELIN, Syst. Nat., i, 1788, 889 (based on *Summer Red-bird*, *Muscicapa rubra* Catesby, Nat. Hist. Carolina, i, 56, pl. 56).—LATHAM, Index Orn., ii, 1790, 422.

*Tanagra æstiva* WILSON, Am. Orn., i, 1808, 95, pl. 6, figs. 3, 4.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 53; Ann. Lyc. N. Y., ii, 1826, 205.—LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 2 (see Journ. für Orn., 1863, 56).—AUDUBON, Orn. Biog., i, 1831, 232, pl. 44; v, 1839, 518.—NUTTALL, Man. Orn. U. S. and Canada, i, 1832, 469.

*Pyranga æstiva* VIEILLOT, Nouv. Dict. d'Hist. Nat., 2d ed., xxviii, 1819, 291; Enc. Méth., ii, 1823, 799.—BONAPARTE, Proc. Zool. Soc. Lond., 1837, 117 (Guatemala); Geog. and Comp. List, 1838, 35.—AUDUBON, Synopsis, 1839, 136; Birds Am., oct. ed., iii, 1841, 222, pl. 208.—D'ORBIGNY, in La Sagra's Hist.

Nat. Cuba, Ois., 1839, 76.—CASSIN, *Proc. Ac. Nat. Sci. Phila.*, iv, 1848, 90 (Jalapa, Vera Cruz), xii, 1860, 140 (Turbo, n. Colombia, Apr.).—JARDINE, *Contr. Orn.*, 1850, 67 (Bermudas).—SECLATER, *Proc. Zool. Soc. Lond.*, 1855, 156 (Bogota, Colombia); 1856, 123 (monogr.), 142 (Boquete, Chiriqui), 303 (Corlova, Vera Cruz); 1858, 73 (Ecuador), 358 (Honduras); 1859, 364 (Jalapa), 377 (Oaxaca); 1860, 65 (Pallatanga, e. Ecuador), 293 (Esmeraldas, w. Ecuador); *Synop. Av. Tanagr.*, 1856, 47; *Cat. Am. Birds*, 1862, 80 (Pallatanga, e. Ecuador; Colombia; Guatemala); *Cat. Birds Brit. Mus.*, xi, 1886, 182 (Orizaba, Vera Cruz; Cozumel I., Yucatan; Dueñas, Chocoma, Chusec, Tactio, Savana Grande, and Livingston, Guatemala, San Pedro, Honduras, Chontales, Nicaragua, Nicoya, Atiro, and Irazú, Costa Rica, Chiriqui; Caloveyora and Santa Fé, Veragua, Chépo and Panama, Isth. Panama; Santa Marta, Medellin, prov. Antioquia, and Bogota, Colombia, Samayaca, Rio Napo, and Pallatanga, Ecuador; Roraima, Brit. Guiana).—BAIRD, *Rep. Pacific R. R. Surv.*, ix, 1858, 301, *Cat. N. Am. Birds*, 1859, no. 221, *Rep. U. S. and Mex. Bound. Surv.*, ii, pt. ii, 1859, 11 (San Antonio and Brownsville, Texas, etc.).—SECLATER and SALVIN, *Ibis*, 1859, 15 (Rio Dulce, Yzabal, Quirigua, Dueñas, etc., Guatemala); *Proc. Zool. Soc. Lond.*, 1864, 350 (Lion Hill, Panama R. R.), 1870, 836 (San Pedro, Honduras), 1879, 502 (Colombia).—BREWER, *Proc. Bost. Soc. N. H.*, vii, 1860, 307 (Cuba).—GENDLICH, *Journ. fur Orn.*, 1861, 328 (Cuba), 1872, 421 (Cuba); *Repert. Fauna-Nat. Cuba*, i, 1866, 237. LAWRENCE, *Ann. Lyc. N. Y.*, vii, 1861, 297 (Lion Hill, Panama R. R.), viii, 1865, 175 (David, Chiriqui); ix, 1868, 99 (Costa Rica, Bull. U. S. Nat. Mus., no. 4, 1876, 19 (Chibuitan and Santa Efigenia, Oaxaca, Nov., Jan.).—DRESSER, *Ibis*, 1865, 479 (San Antonio, Texas, breeding).—LEOTARD, *Ois. Trinidad*, 1866, 290. SALVIN, *Proc. Zool. Soc. Lond.*, 1867, 139 (Santa Fé, Veragua, David, Chiriqui), 1870, 187 (localities in Veragua), 1872, 316 (Chontales, Nicaragua).—RITCHIE, *Proc. Ac. Nat. Sci. Phila.*, 1868, 149 (Laredo, Texas, Aug.).—RIDGWAY, *Proc. Ac. Nat. Sci. Phila.*, 1869, 130 (crit.), *Nom. N. Am. Birds*, 1881, no. 164. FRANTZUS, *Journ. fur Orn.*, 1869, 299 (Costa Rica).—STIMMUS, *Memo. Bost. Soc. N. H.*, i, 1869, 548 (Vera Cruz).—MAYNARD, *Naturalists' Guide*, 1870, 109 (Massachusetts, Birds, *E. N. Ann.*, 1885, 87. WYATT, *Ibis*, 1871, 326 (Colombia).—COTTS, *Check List*, 1873, no. 108, 2d ed., 1882, no. 155; *Birds N. W.*, 1874, 82, part 2. SNOW, *Birds Kansas*, 1873, 5.—BAIRD, BREWER, and RIDGWAY, *Hist. N. Am. Birds*, i, 1874, pl. 20, figs. 5, 6.—MERRIAM, *Trans. Conn. Ac. Sci.*, iv, 1877, 27 (Connecticut, Rhode Island).—MCALLEY, *Bull. U. S. Geol. and Geog. Surv. Terr.*, iii, 1877, 662 (Wolf and Canadian rivers, n. Texas).—PETER, *Bull. Nutt. Orn. Club*, ii, 1877, 21 (near Providence, Rhode Island, one spec.).—SENNETT, *Bull. U. S. Geol. and Geog. Surv. Terr.*, iv, 1878, 14 (Hidalgo, Texas, Apr., May), v, 1879, 388 (Lometa, Texas, breeding).—MERRILL, *Proc. U. S. Nat. Mus.*, i, 1878, 126 (Ft. Brown, Texas, breeding).—BREWER, *Bull. Nutt. Orn. Club*, iv, 1879, 213 (Chester, South Carolina, breeding, descr. nest and eggs).—TROTTER, *Bull. Nutt. Orn. Club*, iv, 1879, 235 (accidental near Philadelphia).—SALVIN and GODMAN, *Ibis*, 1879, 20 (Atanques, prov. Santa Marta, Colombia, alt. 4 000 ft., Feb.), 1880, 121 (Santa Marta), *Biol. Centr.-Am.*, Avcs., i, 1883, 289.—NEHRLING, *Bull. Nutt. Orn. Club*, vii, 1882, 12 (s. e. Texas; breeding).—BATCHELDER, *Bull. Nutt. Orn. Club*, vii, 1882, 249 (Grand Manan, New Brunswick, 1 spec., May 12 or 14, 1881).—BOUCARD, *Proc. Zool. Soc. Lond.*, 1883, 443 (Valladolid, Yucatan).—BERLEPSCH and TACZANOWSKI, *Proc. Zool. Soc. Lond.*, 1883, 546 (Chumbo, w. Ecuador, Oct. to Dec.).—BERLEPSCH, *Journ. fur Orn.*, 1884, 292 (Bucaramanga, Colombia).—MILLWRIGHT, *Auk*, i, 1884, 390 (Hasterton, Ontario, 1 spec., May 20).—TACZANOWSKI and BERLEPSCH, *Proc. Zool. Soc. Lond.*, 1885, 81 (Machay, centr. Ecuador, Feb.).—TACZANOWSKI, *Orn.*

- Pérou, ii, 1885, 494.—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 357, 1899, 18 (Pun, e. Ecuador, Feb.; Foreste del Rio Peripa, w. Ecuador, Nov.).
- [*Pyranga*] *aestiva* BONAPARTE, Consp. Av., i, 1850, 241, part.—COUES, Key N. Am. Birds, 1872, 111.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.—CORY, List Birds W. I., 1885, 11.
- P[yranga]* *aestiva* NELSON, Bull. Essex Inst., viii, 1876, 104 (n. e. Illinois; rare summer resid.).—COUES, Key N. Am. Birds, 2d ed., 1884, 318.
- [*Piranga*] *aestiva* GRAY, Hand-list, ii, 1870, 60, no. 6836.
- Pyranga aestiva* var. *aestiva* BAIRD, BREWER, and RIDGWAY, Hist. N. Amer. Birds, i, 1874, 441.
- [*Pyranga aestiva*] a. *aestiva* COUES, Birds N. W., 1874, 82 (synonymy).
- [*Pyranga aestiva cooperi*] a. *aestiva* COUES, Birds Col. Val., 1878, 353 (synonymy).
- Pyranga aestiva aestiva* GOODE, Bull. U. S. Nat. Mus., no. 20, 1883, 339.
- [*Phoenisoma*] *aestiva* SWAINSON, Classif. Birds, ii, 1837, 284.
- Phoenisoma aestiva* CABANIS, Journ. für Orn., 1860, 329 (Costa Rica).
- Ph[oenicosoma]* *aestiva* CABANIS, Mus. Hein., i, 1850, 25.
- Phoenicosoma aestiva* GUNDLACH, Journ. für Orn., 1855, 477 (Cuba); 1861, 409 (Cuba).
- [*Phoenicosoma*] *aestivum* GIEBEL, Thesaurus Orn., iii, 1876, 109.
- [*Tanagra*] *variegata* LATHAM, Index Orn., i, 1790, 421 (based on *Tanagra mississippiensis* and *Loxia virginica* Gmelin; =male in transition plumage).
- Pyranga livida* SWAINSON, Philos. Mag., new ser., i, 1827, 438 (Real del Monte, Hidalgo, Mexico).

### PIRANGA RUBRA COOPERI Ridgway.

#### WESTERN SUMMER TANAGER.

Similar to *P. r. rubra*, but decidedly larger, with coloration paler; adult male dull vermilion above (clearer on pileum, rump, and upper tail-coverts), clear light vermilion beneath; adult female pale olive-grayish above, tinged with olive-yellowish on back and scapulars, pale chrome or pale gamboge yellow beneath.

*Adult male*.—Length (skins), 167.6–190.5 (179.6); wing, 93–106.2 (100.3); tail, 75.7–85.9 (80.5); exposed culmen, 18.3–19.8 (19.3); depth of bill at base, 9.7–10.9 (10.4); tarsus, 18.3–21.3 (20.3); middle toe with claw, 14–15.5 (15).<sup>1</sup>

*Adult female*.—Length (skins), 177.8–199.4 (188.5); wing, 96.5–102.1 (98.6); tail, 74.9–82.8 (79); exposed culmen, 19.3–20.3 (19.8); depth of bill at base, 10.7; tarsus, 19.8–21.1 (20.6); middle toe, 14.5–16 (15.2).<sup>2</sup>

Southwestern United States, from middle Texas through western Texas, New Mexico and Arizona to the lower Colorado Valley, California; south through western Mexico to the state of Colima; north, casually (?) to Colorado (Denver).

*Pyranga aestiva* (not *Tanagra aestiva* Gmelin) WOODHOUSE, in Rep. Sitgreaves' Expl. Zuñi and Colorado, 1853, 82, part (Texas; New Mexico).—HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 312 (New Mexico); xi, 1859, 106 (do.).—HEERMANN, Rep. Pacific R. R. Surv., x, no. 1, 1859, 17 (Texas).—COOPER, Proc. Cal. Ac. Sci., 1861, 162 (Ft. Yuma, Arizona).—COUES, Ibis, 1865, 159 (New Mexico); Proc. Ac. Nat. Sci. Phila., xviii, 1866, 71 (Arizona).—FINSCH, Abh. Nat. Ver. Brem., i, 1870, 338 (Mazatlan).

<sup>1</sup> Ten specimens.

<sup>2</sup> Six specimens.

- Pyrranga hepatica* (not of Swainson) COUES, Proc. Ac. Nat. Sci. Phila., xviii, 1886, 71, part (Los Piños, New Mexico).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, iii, 1874, 508 (Tucson, Arizona; descr. nest and eggs).
- Pyrranga cooperi* RIDGWAY, Proc. Ac. Nat. Sci. Phila., xxi, June, 1889, 130 (Los Piños, New Mexico; coll. U. S. Nat. Mus.).—COOPER, Orn. Cal., 1870, 142 (Ft. Mojave, California; Los Piños; Mazatlan, Colima).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, pl. 20, figs. 1, 2.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 290 (Mazatlan; Presidio, near Mazatlan; Colima).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 184 (Presidio).
- [*Piranga*] *cooperi* GRAY, Hand-list, ii, 1870, 61, no. 6847.
- Pyrranga aestiva* . . . var. *cooperi* COUES, Check List, 1873, no. 108a.—HENSLEAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 60 (Denver, Colorado), 108 (Gila R., Arizona); Zool. Exp. W. 100th Merid., 1875, 239, pls. 2, 3 (Denver; Gila and San Francisco rivers, Arizona).
- Pyrranga aestiva*, var. *cooperi* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 444.
- Pyrranga aestiva* var. *cooperi* LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 273 (Mazatlan).
- [*Pyrranga aestiva*] b. *cooperi* COUES, Birds N. W., 1874, 82 (synonymy).
- Pyrranga aestiva cooperi* COUES, Birds Col. Val., 1878, 352, part (excl. synonymy under "a. *aestiva*"), Check List, 2d ed., 1882, no. 156.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 164a.—BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 147 (near Tucson, Arizona; Rio Grande and Gila R., New Mexico; measurements, etc.); Auk, ii, 1885, 198 (Camp Lowell, Arizona; descr. young, etc.).
- P* [*yranga*] a[*estiva*] *cooperi* COUES, Key N. Am. Birds, 2d ed., 1894, 318.
- Piranga rubra cooperi* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 354.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 610a.—MORSON, Bull. Ridgw. Orn. Cl., no. 2, 1887, 50 (Yuma, Arizona).—SCOTT, Auk, v, 1888, 30 (Tucson, Riverside, Florence, Mineral Creek, San Pedro Valley, and Sierra Santa Catalina, Arizona, up to 4,000 ft.).
- P* [*iranga*] *rubra cooperi* RIDGWAY, Man. N. Am. Birds, 1887, 454

PIRANGA HEPATICA Swainson.

bright, rather pale vermilion than orange-scarlet, some of the feathers (especially on breast) with paler tips.

*Adult female in summer*.—Pileum yellowish olive-green, becoming yellow on supraloral region, passing gradually into dull olive-grayish on back, scapulars, rump, and upper tail-coverts, the last more tinged with olive-yellowish; wings darker brownish gray with paler edgings, these pale olive-grayish (tinged with yellowish) on greater coverts and tertials, light yellowish olive-green or almost yellow on primaries and proximal secondaries; tail dull grayish olive with yellowish olive-green edgings; loreal, suborbital, and auricular regions dull grayish; under parts mainly yellow, brightest (gamboge or chrome) on throat, palest (canary yellow) on under tail-coverts, the sides tinged with grayish olive, passing into light yellowish gray on flanks; bill, feet, etc., as in adult male.

*Adult female in autumn and winter*.—Similar to the summer female, but plumage softer and coloration rather brighter.

*Young, nestling plumage*.—Conspicuously streaked beneath with dusky on a pale buffy ground, more indistinctly streaked above on a grayish olive ground; middle and greater wing-coverts margined terminally with buff; otherwise like adult female.<sup>1</sup>

*Adult male*.—Length (skins), 175.3–198.1<sup>2</sup> (186.2); wing, 100.6–104.9 (102.6); tail, 79.2–85.6 (81.5); exposed culmen, 16.8–18.5 (17.5); depth of bill at base, 9.9–11.4 (10.4); tarsus, 22.4–23.9 (22.6); middle toe, 15.2–17.5 (16).<sup>3</sup>

*Adult female*.—Length (skins), 175.3–196.9 (186.9);<sup>4</sup> wing, 97.8–101.3 (99.3); tail, 74.7–84.8 (79.8); exposed culmen, 17–18 (17.5); depth of bill at base, 10.2–10.7 (10.4); tarsus, 21.8–23.4 (22.6); middle toe, 15.5–16.8 (16).<sup>5</sup>

Mexican plateau, and northward to northwestern Arizona (confluence of Beaverdam River and Rio Virgin) and southern New Mexico; highlands of Guatemala.

*Pyrranga hepatica* SWAINSON, Philos. Mag., new ser., i, 1827, 438 (Real del Monte, Hidalgo, Mexico).—SCLATER, Proc. Zool. Soc. Lond., 1856, 124 (monogr.); 1857, 213 (Orizaba, Vera Cruz); 1858, 303 (La Parada, Oaxaca); 1859, 364 (Jalapa, Vera Cruz), 377 (Talea, Villa Alta, and Choapam, Oaxaca); 1864, 373 (Valley of Mexico); Synop. Av. Tanagr., 1856, 48; Cat. Am. Birds, 1862, 81 (Jalapa, Vera Cruz); Cat. Birds Brit. Mus., xi, 1886, 186.—BAIRD, Rep. Pacific R. R. Surv. ix, 1858, 302 (Zuñi and Fort Thorn, New Mexico); ed. 1860 ("Birds N. Am."), atlas, pl. 31; Cat. N. Am. Birds, 1859, no. 222.—KENNERLY, Rep. Pacific R. R. Surv., x, 1859, 30, pl. 31 (San Francisco Mts., Arizona).—HENRY, Proc. Ac. Nat. Sci. Phila., 1859, 106 (New Mexico).—SCLATER and SALVIN, Ibis, 1859, 15 (Guatemala)—COUES, Proc. Ac. Nat.

<sup>1</sup> The specimen described lacks the head.

<sup>2</sup> Length before skinning about 208.3

<sup>3</sup> Seven specimens, from Arizona and New Mexico.

<sup>4</sup> Length before skinning about 198.1–205.7.

<sup>5</sup> Five specimen, from Arizona and New Mexico.

- Sci. Phila., 1866, 71 (Fort Whipple, Arizona); Check List, 1873, no. 109; 2d ed. 1882, no. 157; Birds Col. Val., 1878, 355.—RIDGWAY, Proc. Ac. Nat. Sci. Phila., 1869, 132 (crit.); Nom. N. Am. Birds, 1881, no. 163.—SMICHBAST, Mem. Bost. Soc. N. H., i, 1869, 549 (Vera Cruz, from coast up to 10,000 ft.)—DUNES, La Naturaleza, i, 1870, 140 (Guanajuato).—COOPER, Orn. Cal., 1870, 144 (Arizona, etc.).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 274 (Sierra Madre, bet. Mazatlan and Durango); Bull. U. S. Nat. Mus., no. 4, 1876, 19 (Guichicovi, Oaxaca, Sept.; Gineta Mts., Chiapas, Jan.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 440, pl. 20, figs. 9, 10.—HENSCHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 108 (Apache, etc., Arizona; habits); Zool. Exp. W. 100th Merid., 1875, 237 (Apache, Willow Springs, Rock Cañon, Bowie Agency, Camp Crittenden, etc., Arizona; habits; descr. nest).—BREWSTER, Bull. Nutt. Orn. Club, vi, 1881, 68, (Chiricahua Mts., Arizona); vii, 1882, 146 (Santa Rita Mts., Arizona; measurements, etc.); Auk, ii, 1885, 197 (Santa Rita Mts.; descr. young female).—SALVIN, Cat. Strickland Coll., 1882, 192 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 291.
- [*Pyranga*] *hepatica* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22.—COUES, Key N. Am. Birds, 1872, 112.
- [*Pyranga*] *hepatica* COUES, Key N. Am. Birds, 2d ed., 1884, 318.
- [*Piranga*] *hepatica* GRAY, Hand-list, ii, 1870, 60, no. 6838.
- Piranga hepatica* AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 609.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 140 (Tezuitlan, Puebla, Nov.).—SCOTT, Auk, v, 1888, 30 (Sierra Santa Catalina, oak belt, 5,000 ft.; remarks on plumage, etc.).—MEARNS, Auk, vii, 1890, 260 (Mogollon Mts., Arizona, breeding in pine belt).—ANTHONY, Auk, ix, 1892, 366 (Apache, s. w. New Mexico).—JOY, Proc. U. S. Nat. Mus., xvi, 1893, 779 (Barranca Ibarra, Jalisco, Mar. 10).—FISHER, North Am. Fauna, no. 7, 1893, 109 (confluence of Beaverdam and Rio Virgin, n. w. Arizona).—NEHRLING, Our Native Birds, etc., ii, 1896, 17.—CHAPMAN, Bull. Am. Mus. N. H., x, 1896, 40 (Las Vigas, Vera Cruz, 8,000 ft.).
- [*Pyranga*] *hepatica* RIDGWAY, Man. N. Am. Birds, 1887, 455.
- [*Pyranga hepatica*] var. *hepatica* BAIRD, BREWER, and RIDGWAY, Hist. N. Am.



*Adult female*.—Above bright yellowish olive-green, below yellowish olive-green laterally and on chest (the latter paler and more yellowish), the throat, abdomen, and under tail-coverts clear yellow (lemon yellow), the first sometimes tinged with orange; length (skins), 157.5–177.8 (169.4); wing, 81.3–88.1 (84.6); tail, 66.8–74.9 (72.4); exposed culmen, 16.5–20.1 (18.5); depth of bill at base, 10.2–11.4 (10.9); tarsus, 20.3–22.9 (21.3); middle toe, 14–15 (14.5).<sup>1</sup>

Nicaragua (Chontales) to Colombia ("Bogota"). (South to central Peru and Bolivia?<sup>2</sup>)

*Pyrranga hepatica* (not of Swainson) SALVIN, Proc. Zool. Soc. Lond., 1867, 139 (Santa Fé, Veragua).

*Pyrranga testacea* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 388 (Chitra, Veragua; coll. Salvin and Goldman); 1879, 502 (Antioquia, Colombia).—RIDGWAY, Proc. Ac. Nat. Sci. Phila., 1869, 133, part (Angostura, Costa Rica; Veragua).—SALVIN, Proc. Zool. Soc. Lond., 1870, 187 (Chitra, Boquete de Chitra, and Calovevora, Veragua).—ZELEDON, Cat. Aves de Costa Rica, 1882, 7.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 292, part, pl. 19, figs. 1, 2 (Chontales, Nicaragua; Angostura, Costa Rica; localities in Veragua; Colombia).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 184, part (Chontales, Nicaragua; Costa Rica; Chitra and Santa Fe, Veragua; Concordia and Antioquia, Colombia).

[*Pyrranga*] *testacea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22.

[*Pyrranga saira*] var. *testacea* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 434, part (Angostura, Costa Rica; Veragua).

*Piranga testacea* ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Pozo Azul de Pirris, Naranjo de Cartago and Cartago, Costa Rica).

*P[iranga] testacea* RIDGWAY, Man. N. Am. Birds, 1887, 455.

[*Phænicosoma*] *testaceum* GIEBEL, Thesaurus Orn., iii, 1876, 111.

#### PIRANGA TESTACEA FIGLINA (Salvin and Goldman).

##### BELIZE TANAGER.

Similar to *P. t. testacea*, but wing and tail longer and coloration duller; adult male with red of upper parts lighter (approaching chestnut-rufous), that of under parts lighter and duller (approaching orange-rufous), with the darker shading on chest and sides less pronounced; auricular region more or less brownish, with fine shaft-streaks of paler, instead of uniform or nearly uniform dark red, like pileum; adult female rather lighter yellowish olive-green above, with auricular region much duller and with fine shaft-streaks of whitish, instead of uniform yellowish olive-green, like pileum.

*Adult male*.—Length (skins), 170.2–182.9 (174.8); wing, 88.4–99.1 (94.7); tail, 70.9–79.5 (76.7); exposed culmen, 17.8–19.3 (18.3); depth of bill at base, 10.4–11.7 (10.9); tarsus, 21.1–22.6 (21.3); middle toe, 15.2–16.3 (15.7).<sup>3</sup>

<sup>1</sup>Six specimens.

<sup>2</sup>I have not seen specimens from south of Bogota, but there are rather numerous records for Ecuador, Peru, and Bolivia. I suspect that the bird from Chontales, Nicaragua, may be *P. t. figlina*, or at least an intermediate between the two forms.

<sup>3</sup>Seven specimens.



*Adult female*.—Length (skins), 167.6–177.8 (171.7); wing, 80.8–95.8 (87.1); tail, 64.3–78.7 (70.6); exposed culmen, 17–17.5 (17.3) depth of bill at base, 10.4–11.2 (10.7); tarsus, 20.8–21.3 (21.1); middle toe, 15–15.2 (15.2).<sup>1</sup>

(Guatemalan specimens have the wing and tail longer, average measurements being as follows:

Locality	Wing.	Tail.	Ex- posed culmen	Depth of bill at base	Tarsus.	Middle toe.
<b>MALES.</b>						
Five adult males from central Guatemala .....	96.5	78.2	18.3	10.9	21.6	15.7
One adult male from British Honduras (Manatee R.) .....	92.2	73.9	18.8	10.9	22.4	15.2
One adult male from southern Honduras (Sego- via R.) .....	88.4	70.9	17.8	10.9	22.6	15.7
<b>FEMALES.</b>						
One adult female from central Guatemala.....	96.8	78.7	17	10.4	20.8	15.2
Two adult females from southern Honduras (Se- govia R.) .....	82.8	65.5	17.5	10.9	21.1	15

Central Guatemala (pine-ridge of Poctun) to southern Honduras (Segovia River).<sup>2</sup>

*Pyrranga testacea* (not of Sclater and Salvin) RIDGWAY, Proc. Ac. Nat. Sci. Phila., 1869, 133, part (Rio Manati and Belize, British Honduras).—BOCCARD, Liste Ois. Guat., 1878, 33.

[*Pyrranga*] *testacea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part (Honduras).

[*Pyrranga* *saira*] var. *testacea* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 434, part (Rio Manati and Belize, British Honduras).

*Pyrranga figlina* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, sig. 37, Dec. 1883, 293 (Manati R., British Honduras, coll. U. S. Nat. Mus.).—SCLATER, Cat.

outer margin of black; bill (in life) grayish blue basally, dull yellowish green terminally; iris brown; legs and feet (in life) pale lavender gray or lilaceous grayish blue.

*Adult male in fall and winter.*—Wings and tail black, as in summer; rest of upper parts yellowish olive-green, more yellowish on forehead and crown; under parts yellow (gambooge), shaded with olive-green laterally.

*Adult female in spring and summer.*—Above yellowish olive-green, usually somewhat more grayish on back and scapulars, especially the latter; wings (except lesser coverts and tail) dusky brownish gray with olive-greenish edgings; under parts light yellow (about intermediate between citron or sulphur and canary), shaded laterally with olive greenish; under tail-coverts clear canary yellow; under wing-coverts grayish white (sometimes slightly tinged with pale yellow), with broad outer margin of grayish olive green or dull olive-grayish; bill (in dried skins) horn color, the mandible paler; iris brown; legs and feet (in dried skins) grayish horn color (bluish gray in life?).

*Young male in first autumn.*—Similar to adult female but yellow of under parts rather clearer, and middle and greater wing coverts margined terminally with light yellow; the black first appearing (by middle of September) on lesser and middle wing-coverts and scapulars.

*Young male, nestling plumage.*—Above olive-greenish, faintly mottled with dusky; wings and tail grayish dusky with olive-green edgings, the middle wing-coverts and outer webs of greater coverts tipped with olive-yellowish, producing two rather distinct bands; under parts white, tinged with sulphur yellow posteriorly (the under tail-coverts canary yellow), the chest, upper breast, and sides broadly streaked with grayish dusky.

*Adult male.*—Length (skins), 158.8-171.5 (163.6);<sup>1</sup> wing, 91.9-99.3 (96.8); tail, 65-71.6 (68.3); exposed culmen, 14.5-15.7 (15.2); depth of bill at base, 8.9-9.7 (9.4); tarsus, 19.6-20.8 (19.8); middle toe, 13.2-15.5 (14).<sup>2</sup>

*Adult female.*—Length (skins), 157.5-170.2 (165.1);<sup>3</sup> wing, 87.6-94.5 (92.7); tail, 64-70.4 (67.1); exposed culmen, 14.5-15.7 (15); depth of bill at base, 8.1-9.4 (8.9); tarsus, 17.8-20.8 (19.6); middle toe, 13-14.7 (13.7).<sup>4</sup>

Eastern United States and more southern British Provinces, north to New Brunswick (Grand Falls), Nova Scotia, northern Ontario (Parry sound, Muskoka, etc.), Manitoba (Winnipeg, Assiniboine River, etc.), breeding southward at least to Virginia, Kentucky, Missouri, etc. (in Allegheny Mountains to South Carolina); in winter migrating southward to West Indies (Bahamas; Cuba; Jamaica; Barbados; Antigua), and through Mexico, Central America, and northern South America.

<sup>1</sup>Length before skinning, about 184.2-190.5.

<sup>2</sup>Length before skinning, about 77-75.

<sup>3</sup>Fourteen specimens.

<sup>4</sup>Ten specimens.

*Adult female*.—Length (skins), 167.6–177.8 (171.7); wing, 80.8–95.8 (87.1); tail, 64.3–78.7 (70.6); exposed culmen, 17–17.5 (17.3) depth of bill at base, 10.4–11.2 (10.7); tarsus, 20.8–21.3 (21.1); middle toe, 15–15.2 (15.2).<sup>1</sup>

Guatemalan specimens have the wing and tail longer, average measurements being as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Five adult males from central Guatemala .....	96.5	78.2	18.3	10.9	21.6	15.7
One adult male from British Honduras (Manatee R.) .....	92.2	73.9	18.8	10.9	22.4	15.2
One adult male from southern Honduras (Sego- via R.) .....	88.4	70.9	17.8	10.9	22.6	15.7
<b>FEMALES.</b>						
One adult female from central Guatemala .....	96.8	78.7	17	10.4	20.8	15.2
Two adult females from southern Honduras (Se- govia R.) .....	82.8	65.5	17.5	10.9	21.1	15

Central Guatemala (pine-ridge of Poctun) to southern Honduras (Segovia River).<sup>2</sup>

*Pyrranga testacea* (not of Sclater and Salvin) RIDGWAY, Proc. Ac. Nat. Sci. Phila., 1889, 133, part (Rio Manati and Belize, British Honduras).—BOUCAUD, Liste Ois. Guat., 1878, 33.

[*Pyrranga*] *testacea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part (Honduras).

[*Pyrranga naira*] var. *testacea* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 434, part (Rio Manati and Belize, British Honduras).

*Pyrranga testacea* (not of Sclater and Salvin) RIDGWAY, Proc. Ac. Nat. Sci. Phila., 1889, 133, part (Rio Manati and Belize, British Honduras).

outer margin of black; bill (in life) grayish blue basally, dull yellowish green terminally; iris brown; legs and feet (in life) pale lavender gray or bluish grayish blue.

*Adult male in fall and winter.*—Wings and tail black, as in summer; rest of upper parts yellowish olive green, more yellowish on forehead and crown; under parts yellow (gamboge), shaded with olive-green laterally.

*Adult female in spring and summer.*—Above yellowish olive-green, usually somewhat more grayish on back and scapulars, especially the latter, wings (except lesser coverts and tail) dusky brownish gray with olive-greenish edgings; under parts light yellow (about intermediate between citron or sulphur and canary), shaded laterally with olive greenish; under tail coverts clear canary yellow; under wing-coverts grayish white (sometimes slightly tinged with pale yellow), with broad outer margin of grayish olive-green or dull olive-grayish; bill (in dried skins) horn color, the mandible paler; iris brown; legs and feet (in dried skins) grayish horn-color (bluish gray in life!).

*Young male in first autumn.* Similar to adult female but yellow of under parts rather clearer, and middle and greater wing-coverts margined terminally with light yellow; the black first appearing (by middle of September) on lesser and middle wing-coverts and scapulars.

*Young male, nestling plumage.* Above olive-greenish, faintly mottled with dusky; wings and tail grayish dusky with olive-green edgings, the middle wing-coverts and outer webs of greater coverts tipped with olive-yellowish, producing two rather distinct bands; under parts white, tinged with sulphur yellow posteriorly (the under tail-coverts canary yellow), the chest, upper breast, and sides broadly streaked with grayish dusky.

*Adult male.* Length (skins), 158.8-171.5 (163.6);<sup>1</sup> wing, 91.9-99.3 (95.6); tail, 65-71.6 (68.3); exposed culmen, 14.5-15.7 (15.2); depth of bill at base, 8.9-9.7 (9.4); tarsus, 19.6-20.8 (19.8); middle toe, 13.2-15.5 (14.4).<sup>2</sup>

*Adult female.* Length (skins), 157.5-170.2 (165.1);<sup>3</sup> wing, 87.6-94.5 (91.1); tail, 64-70.4 (67.1); exposed culmen, 14.5-15.7 (15); depth of bill at base, 8.1-9.4 (8.9); tarsus, 17.8-20.8 (19.6); middle toe, 13-14.7 (13.7).<sup>4</sup>

Eastern United States and more southern British Provinces, north to New Brunswick (Grand Falls), Nova Scotia, northern Ontario (Parry Sound, Muskoka, etc.), Manitoba (Winnipeg, Assiniboine River, etc.), breeding southward at least to Virginia, Kentucky, Missouri, etc. (in Allegheny Mountains to South Carolina); in winter migrating southward to West Indies (Bahamas; Cuba; Jamaica; Barbados; Antigua), and through Mexico, Central America, and northern South America.

<sup>1</sup>Length before skinning, about 184-200.5

<sup>2</sup>Length before skinning, about 77-25

<sup>3</sup>Fourteen specimens.

<sup>4</sup>Ten specimens.

to Bolivia (Pillon) and central Peru; west, casually or occasionally to eastern Colorado and Wyoming; accidental in Bermudas.

Average measurements of eastern and western specimens are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Seven adult males from Atlantic States.....	95.8	68.6	15.2	9.4	19.8	14
Seven adult males from Mississippi Valley .....	95.5	68.1	15.5	9.1	19.8	14
FEMALES.						
Six adult females from Atlantic States.....	92.7	67.3	15.2	8.6	19.6	13.7
Four adult females from Mississippi Valley.....	92.5	66.5	15	8.9	19.8	13.7

[*Tunagra*] *rubra* (not of *Fringilla rubra* Linnaeus, 1758) LINNAEUS, Syst. Nat., ed. 12, i, 1766, 314 (based on *Cardinalis canadensis* Brisson, Orn., iii, 48 pl. 2, fig. 5).—

BODDAERT, Tabl. Pl. Enl., 1783, 10 (ex Pl. Enl., pl. 156, fig. 1).—GMELIN, Syst. Nat., i, pt. ii, 1788, 889.—LATHAM, Index Orn., i, 1790, 420.

*Tanagra rubra* WILSON, Am. Orn., ii, 1810, 42, pl. 11, figs. 3, 4.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 53; Ann. Lyc. N. Y., ii, 1826, 105.—LESSON, Traité d'Orn., 1831, 465.—NUTTALL, Man. Orn. U. S. and Canada, i, 1832, 465.—AUDUBON, Orn. Biog., iv, 1838, 388, pl. 354, figs. 3, 4.

*Pyrrunga rubra* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 273.—JARDINE, ed. Wilson's Am. Orn., i, 1832, 192.—BONAPARTE, Geog. and Comp. List, 1838, 35.—AUDUBON, Synopsis, 1839, 136; Birds Am., oct. ed., iii, 1841, 226, pl. 209.—D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 78.—GOSSE, Birds Jamaica, 1847, 235.—JARDINE, Contr. Orn. 1850, 67 (Bermudas).—WOODHOUSE, Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 82 (Indian Territory and Texas).—SCLATER, Proc. Zool. Soc. Lond., 1855, 156 (Bogotá, Colombia); 1856, 123 (monogr.); 1858, 73 (Rio Napo, e. Ecuador); Synop. Av. Tanagr., 1856, 47; Cat. Am. Birds, 1862, 80 (Philadelphia, Pennsylvania; Bogotá), Cat. Birds Brit. Mus. xi, 1880, 188 (Cozumel I., Yucatan, Vera Paz).

- Hist. N. Am. Birds, i, 1874, 435, pl. 20, figs. 7, 8.—TACZANOWSKI, Proc. Zool. Soc., Lond., 1874, 514 (centr. Peru).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (San José, Costa Rica, Apr.); 1883, 443 (Yucatan).—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 62 (plumages of adult male).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 161.—CHAMBERLAIN, Bull. Nutt. Orn. Club, vii, 1882, 111 (Grand Falls, New Brunswick).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 287.—BICKNELL, Auk, i, 1884, 326 (song).—BERLEPSCH, Journ. für Orn., 1884, 292 (Bucaramanga, Colombia).—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 81 (Machay, centr. Ecuador, Dec.)—AGERSBORG, Auk, ii, 1885, 278 (s. e. South Dakota, breeding.)
- [*Piranga*] *rubra* GRAY, Hand-list, ii, 1870, 60, no. 6835.
- [*Pyranga*] *rubra* COUES, Key N. Am. Birds, 1872, 111.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22.—CORY, List Birds W. I., 1885, 11.
- [*yranga*] *rubra* NEWTON (A. and E.), Handb. Jamaica, 1881, 104.—COUES, Key N. Am. Birds, 2d ed., 1884, 318.
- iranga rubra* MERRIAM, Bull. U. S. Nat. Mus., no. 25, 1884, 283 (Bermudas, 1 spec., Apr. 18, 1881).
- [*haenisoma*] *rubra* SWAINSON, Classif. Birds, ii, 1837, 284.
- h[oenicosoma]* *rubra* CABANIS, Mus. Hein., i, 1850, 24.
- hoenicosoma rubra* GUNDLACH, Journ. für Orn., 1855, 477 (Cuba).
- Phoenicosoma*] *rubrum* GIEBEL, Thesaurus Orn., iii, 1876, 110.
- yranga erythromelas* VIEILLOT, Nouv. Dict. d'Hist. Nat., xxviii, 1819, 293, pl. 22, fig. 1 (based on *Tanagra rubra* Latham, etc.).
- Pyranga etythromelas* [err. typ.] VIEILLOT, Enc. Méth., ii, 1823, 800.
- Piranga erythromelas* AMERICAN ORNITHOLOGISTS' UNION, Check List., 1886, no. 608.—BREWSTER, Auk, iii, 1886, 110 (mountains of w. North Carolina, breeding up to 5,000 ft.).—CORY, Auk, iii, 1886, 199 (West Indian references; Cuba; Jamaica; Barbadoes); viii, 1891, 47 (Antigua); Birds W. I., 1889, 86; Cat. W. I. Birds, 1892, 114, 152 (New Providence and Andros, Bahamas; Cuba; Jamaica; Tortola; Barbados).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Cartago, Naranjo de Cartago, Dota, and Barranca, Costa Rica).—BOND, Auk, vi, 1889, 341 (Cheyenne, Wyoming, 2 specs., May 28).—SCOTT, Auk, vi, 1889, 324 (Tarpon Springs, s. w. Florida, migr.; Key West, Apr. 27 and 29); x, 1893, 180 (Jamaica).—RIDGWAY, Orn. Illinois, i, 1889, 215.—LOOMIS, Auk, vii, 1890, 125 (mountains of South Carolina, breeding above 2,000 ft.); viii, 1891, 329 (Greenville Co., South Carolina, 2,000 ft.); x, 1893, 154 (remarks on plumage).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 608 (Winnipeg, Assiniboine R., etc., Manitoba, rare summer resident).—GOSS, Birds, Kansas, 1891, 497 (summer resid. e. and mid. Kansas).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 490 (Rio Escondido, Nicaragua, Sept. 27; Rio Frio, Costa Rica, Mar. 1, both in scarlet and black plumage!).—NEHRLING, Our Native Birds, etc., ii, 1896, 2, pl. 25, fig. 1.—COOKE, Bull. Col. Agric. Coll., no. 44, 1898, 167 (near Newcastle, Colorado, 2 specs. spring, 1892; Del Norte Valley, 1 spec. Sept., 1883).—FLEMING, Auk, xviii, 1901, 42 (Parry Sound and Muskoka, n. Ontario, common summer resident).
- [*iranga*] *erythromelas* RIDGWAY, Man. N. Am. Birds, 1887, 454.

### PIRANGA LUDOVICIANA (Wilson).

#### LOUISIANA TANAGER.

*Adult male in summer.*—Back, scapulars, wings, and tail black, the sometimes slightly mixed with yellow; posterior row of lesser coverts, middle coverts, broad tips to outer webs of greater coverts, rump, upper tail-coverts, hindneck, and under parts of body

yellow (lemon or gamboge to canary yellow), the tips to greater wing-coverts usually paler yellow, sometimes whitish, and the hindneck sometimes tinged with red; head (at least anteriorly), all round, red (varying from orange-chrome to almost crimson on pileum, paler on throat);<sup>1</sup> under wing-coverts light yellow; bill (in life) dull wax yellowish, darker and more brownish toward culmen; iris brown; legs and feet (in life) bluish gray.

*Adult male in winter.*—Similar to the summer male but with head yellow (or but slightly tinged with red), more or less obscured on occiput and hindneck with olive-greenish or dusky tips to the feathers; feathers of back usually more or less distinctly margined with yellowish olive; tertials broadly margined terminally with white or pale yellow, the rectrices also more or less broadly margined at tips with white.<sup>2</sup>

*Adult female in summer.*—Above olive-greenish, the back and scapulars usually more or less tinged with gray, the rump and upper tail-coverts more yellowish; wings grayish dusky with light olive-greenish edgings (usually more grayish on primaries, primary coverts, and alula); middle coverts broadly tipped with light yellow and outer webs of greater coverts broadly tipped with paler yellow or white, forming two distinct bands; tail grayish brown or olive, with yellowish olive-green edgings; under parts dull yellowish (varying from pale buffy yellow to almost gamboge), the under tail-coverts clear canary yellow or lemon yellow; anterior portion of head sometimes tinged with red; bill, iris, and feet as in adult male.

*Young male in first autumn.*—Similar to the adult female, but clearer yellow below, and rump more decidedly yellowish.

*Young female in first autumn.*—Much duller in color than the adult

ail-coverts sulphur yellow; rest of under parts white, stained with sulphur yellow, the breast streaked with dusky grayish.

*Adult male*.—Length (skins), 157.5–176.5 (167.9);<sup>1</sup> wing, 94.2–97.3 (95.8); tail, 67.1–75.7 (71.4); exposed culmen, 14.5–15.7 (15); depth of bill at base, 7.9–8.6 (8.1); tarsus, 19.6–21.3 (20.3); middle toe, 14–15.2 (14.7).<sup>2</sup>

*Adult female*.—Length (skins), 160–175.3 (169.2);<sup>1</sup> wing, 89.9–98.6 (92.7); tail, 68.1–73.4 (70.6); exposed culmen, 13.5–16 (14.7); depth of bill at base, 7.9–8.6 (8.1); tarsus, 20.1–20.8 (20.6); middle toe, 14–15 (14.5).<sup>3</sup>

Western United States, from eastern base of Rocky Mountains to Pacific coast, northward to British Columbia (Vancouver Island), Athabasca (Lake Athabaska; Chippewyan), Idaho, Montana, and western Dakota. South in winter over greater part of Mexico to highlands of Guatemala (Dueñas; Volcan de Agua; Volcan de Fuego; Alotenango). Straggling eastward during migration to more northern Atlantic States (Lynn, Massachusetts, January 20, 1878; Fort Montgomery, New York, December 21, 1881; New Haven, Connecticut, December 15, 1892; Bangor, Maine, October 1, 1897), and near New Orleans, Louisiana (March 19, 1898).

*Tanagra ludoviciana* WILSON, Am. Orn., iii, 1811, 27, pl. 20, fig. 1 ("Louisiana," i. e., some part of the territory at that date thus designated).—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 54 (crit.); Ann. Lyc. N. Y., ii, 1826, 105.—NUTTALL, Man. Orn. U. S. and Canada, i, 1832, 471.—ORNITHOLOGICAL COMMITTEE, Journ. Ac. Nat. Sci. Phila., vii, 1837, 193 (Columbia R.).—AUDUBON, Orn. Biog., iv, 1838, 385; v, 1839, 90, pl. 354, figs. 1, 2, and pl. 400, fig. 4.—TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, 154.

*Pyrranga ludoviciana* RICHARDSON, Rep. Brit. Assoc. Adv. Sci., v, 1837, 175.—BONAPARTE, Proc. Zool. Soc. Lond., 1837, 116 (Mexico); Geog. and Comp. List, 1838, 35; Nuov. Ann. Sc. Nat. Bologna, ii, 1839, 344.—AUDUBON, Synop.,

<sup>1</sup>Length before skinning, about 190.5.

<sup>2</sup>Twelve specimens.

<sup>3</sup>Eight specimens.

Specimens from the Rocky Mountain district have, as a rule, larger wings and tails than those from California, and brighter coloration. Average measurements are as follows:

Locality.	Wing.	Tail.	Culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Six adult males from Rocky Mountain district.....	96.3	72.9	15	8.4	20.3	14.7
Six adult males from California.....	95.3	69.9	15	8.1	20.1	14.7
<b>FEMALES.</b>						
Five adult females from Rocky Mountain district..	93.5	71.4	14.2	8.4	20.8	14.7
Five adult females from California.....	92.5	69.1	15.7	8.1	20.6	14.5



- 1839, 137; *Birds Am.*, oct. ed., iii, 1841, 231, pl. 210.—SCLATER, *Proc. Zool. Soc. Lond.*, 1856, 124 (monogr.); 1857, 213 (Orizaba, Vera Cruz); 1859, 377 (Oaxaca); 1862, 19 (La Parada, Oaxaca); *Synop. Av. Tanagr.*, 1856, 49; *Cat. Am. Birds*, 1862, 81 (Southern United States); *Cat. Birds Brit. Mus.*, x, 1866, 191 (Vancouver I.; Orizaba; off San Blas; Doefnas, Guatemala).—BAIRD, *Rep. Pacific R. R. Surv.*, ix, 1858, 303; *Cat. N. Am. Birds*, 1859, no. 223.—XANTUS, *Proc. Ac. Nat. Sci. Phila.*, 1859, 191 (Fort Tejon, California).—HEERMANN, *Rep. Pacific R. R. Surv.*, x, pt. iv, 1859, 52 (Poom Creek and Tejon Valley, California).—SCLATER and SALVIN, *Ibis*, 1859, 15 (Alotenango, Volcan de Agua, Volcan de Fuego, alt. 5,000 ft., and Vera Paz, Guatemala).—COOPER and SUCKLEY, *Rep. Pacific R. R. Surv.*, xii, pt. ii, 1860, 182 (Fort Steilacoom, Puget Sound, etc., Washington; habits).—COUES, *Proc. Ac. Nat. Sci. Phila.*, 1866, 71 (Fort Whipple, Arizona); *Check List*, 1873, no. 116; 2d ed., 1882, no. 158; *Birds N. W.*, 1874, 83, 232; *Birds Col. Val.*, 1878, 358.—BROWN, *Ibis*, 1868, 420 (Vancouver I.).—COOPER, *Am. Nat.*, iii, 1869, 33 (a base Rocky Mts., Montana); *Orn. Cal.*, 1870, 145.—SUMICHRAST, *Mém. Bost. Soc. N. H.*, i, 1869, 550 (Vera Cruz).—BAIRD, BREWER, and RIDGWAY, *Hist. N. Am. Birds*, i, 1874, 437, pl. 20, figs. 3, 4.—HENSCHAW, *Rep. Orn. Spec. Wheeler's Surv.*, 1874, 78 (Garland and Rio Grande, Colorado, up to 10,000 ft.), 107 (Neutria, New Mexico; Apache, Gila R., Goodwin, etc., Arizona); *Zool. Exp. W. 100th Merid.*, 1875, 235 (Provo, Utah; localities in Colorado, New Mexico, and Arizona; habits).—LAWRENCE, *Bull. U. S. Nat. Mus.*, no. 4, 1876, 19 (Isbantlan and Santa Efigenia, Oaxaca, Dec., Jan.).—RIDGWAY, *Orn. 40th Parallel*, 1877, 454 (localities in Nevada and Utah; habits, song, etc.); *Nom. N. Am. Birds*, 1881, no. 162.—BREWER, *Proc. Bost. Soc. N. H.*, 1878, 304 (Lynn, Massachusetts; 1 spec., Jan. 20, 1878); *Ibis*, 1878, 206 (do.).—SALVIN, *Cat. Strickland Coll.*, 1882, 192 (Guatemala).—WILLIAMS, *Bull. Nutt. Orn. Club*, vii, 1882, 62 (Belt Mts., Montana, breeding).—BREWSTER, *Bull. Nutt. Orn. Club*, vii, 1882, 146 (Santa Rita Mts., Arizona, May 18).—SALVIN and GODMAN, *Biol. Centr.-Am.*, Aves, i, 1883, 297.—BELDING, *Proc. U. S. Nat. Mus.*, vi, 1883, 347 (Victoria Mts. and La Paz, Lower California, winter).
- [*Pyrranga ludoviciana* COUES, *Key N. Am. Birds*, 1872, 112.—SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 22.—CORY, *List Birds W. I.*, 1885, 11 (Cuba). *P[yranga] ludoviciana* COUES, *Key N. Am. Birds* 2d ed., 1884, 319.

[*Phoenicosoma*] *ludovicianum* GIEBEL, Thesaurus Orn., iii, 1876, 110.

*Pyranga erythropis* VIEILLLOT, Nouv. Dict. d'Hist. Nat., 2d ed., xxviii, 1819, 291 (based on Wilson, Am. Orn., pl. 20, fig. 1); Enc. Méth., ii, 1823, 799.

*Tanagra columbiana* JARDINE, ed. Wilson's Am. Orn., i, 1832, 317 (Columbia R.).

*Tanagra columbianus* BREWER, ed. Wilson's Am. Orn., 1840, 207.

**PIRANGA BIDENTATA BIDENTATA Swainson.**

**SWAINSON'S TANAGER.**

*Adult male*.—Head, neck, and under parts cadmium orange, the pileum more intense (nearer orange chrome, sometimes tinged with flame scarlet), the hindneck more or less tinged or clouded with olive, the color of under parts fading posteriorly to pale orange or orange-buff on under tail-coverts; lores and orbits pale dingy yellowish; auricular region much duller and lighter orange, obscured by olive or dull grayish, with a dusky spot or bar across posterior margin; back and scapulars light olive, more or less tinged with orange-yellowish, broadly streaked with dusky; rump plain light olive; upper tail-coverts orange-olive; wings dusky grayish brown with pale olive edgings, the middle and greater coverts broadly tipped with white (usually more or less tinged with orange, especially on middle coverts), forming two distinct bands across wing; outer webs of tertials terminating in a white spot (unless worn off); tail grayish brown with light yellowish olive edgings, the inner webs of three outermost rectrices tipped with white (about 1 inch in extent on outermost rectrix); under wing-coverts and axillars pale buffy orange; maxilla blackish with light grayish tomia; mandible dark grayish (pale bluish gray in life?); legs and feet dusky horn-color (bluish gray in life?); length (skins), 167.6–185.4 (178.3); wing, 96–96.5 (96.3); tail, 76.2–81.8 (79.5); exposed culmen, 17.3–18.3 (17.8); depth of bill at base, 9.7–10.2 (9.9); tarsus, 20.3–21.6 (21.1); middle toe, 14.2–15.2 (14.7).<sup>1</sup>

*Adult female*.—Similar to the adult male, but orange replaced by yellow (lemon or gamboge on under parts, more tinged with olive on pileum and hindneck), the rump, wing edgings, etc., olive-greenish; length (skins), 175.3–185.4 (180.3); wing, 91.9–94 (93); tail, 77–78 (77.5); exposed culmen, 16–16.3; tarsus, 20.8–21.1; middle toe, 14.7–15.2 (15).<sup>2</sup>

Southwestern Mexico, in States of Mexico (Temascaltepec), Jalisco (Barranca Ibarra), Sinaloa (Plomosas), etc.

*Pyranga bidentata* SWAINSON, Philos. Mag., new ser., i, 1827, 428 (Temascaltepec, Mexico).—SCLATER, Proc. Zool. Soc. Lond., 1856, 126, part (Temascaltepec): Synop. Av. Tanagr., 1856, 50, part; Cat. Am. Birds, 1862, 82, part (in synonymy); Cat. Birds Brit. Mus., xi, 1886, 190, part (in synonymy).—FINSCH, Abh. Nat. Ver. Brem., ii, 1870, 338 (Mazatlan, Sinaloa).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 296, part (Temascaltepec).

[*Pyranga*] *bidentata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.

<sup>1</sup> Three specimens.

<sup>2</sup> Two specimens, one of them immature.

*P[yranga] bidentata* BONAPARTE, *Consp. Av.*, i, 1850, 241.—BAIRD, BREWER, and RIDGWAY, *Hist. N. Am. Birds*, i, 1874, 433, part.

*Piranga bidentata* JOUV, *Proc. U. S. Nat. Mus.*, xvi, 1894, 779 (Barranca Ibarra, Jalisco).—NELSON, *Auk*, xv, 1898, 157, 158 (crit.; description and synonymy,

*P[yranga] bidentata* RIDGWAY, *Man. N. Am. Birds*, 1887, 456, part.

[*Phoenicosoma*] *bidentatum* GIEBEL, *Thesaurus Orn.*, iii, 1876, 110, part.

**PIRANGA BIDENTATA FLAMMEA** Ridgway.

**TRES MARIAS TANAGER.**

Similar in coloration to *P. b. bidentata*,<sup>4</sup> but with white spaces at tip of inner webs of lateral rectrices much more restricted (not exceeding 0.80 in length on outermost rectrix and usually much less), and size decidedly greater.

*Adult male*.—Length (skins), 182.9–193 (190); wing, 95.8–98 (97); tail, 78–83.3 (80.8); exposed culmen, 17–18 (17.5); depth of bill at base, 10.2–10.7 (10.4); tarsus, 21.6–23.4 (22.9); middle toe, 15.2–16.3 (15.5).<sup>1</sup>

*Adult female*.—Length (skins), 188–193 (190.2); wing, 91.7–94.7 (93.7); tail, 78.2–80.3 (79.2); exposed culmen, 17.3–18.3 (17.8); depth of bill at base, 10.2–10.4 (10.4); tarsus, 22.6–23.9 (23.1); middle toe, 15–15.5 (15.2).<sup>2</sup>

Tres Marias Islands, western Mexico.

*Piranga bidentata* (not of Swainson) GRAYSON, *Proc. Bost. Soc. N. H.*, xiv, 1872, 281 (Tres Marias).—LAWRENCE, *Mem. Bost. Soc. N. H.*, ii, 1874, 274 (Tres Marias).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1883, 296, part (Tres Marias).—SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 190, part (Tres Marias).

*P[yranga] flammea* RIDGWAY, *Man. N. Am. Birds*, 1887, 457 (Tres Marias Islands, western Mexico; coll. U. S. Nat. Mus.).

*Piranga flammea* RIDGWAY, *Man. N. Am. Birds*, 1887, 502, 2d ed., 1890, 614.

(97); tail, 78.5–87.6 (81); exposed culmen, 16.3–17.3 (16.8); depth of bill at base, 8.4–10.2 (9.4); tarsus, 19.8–22.4 (21.1); middle toe, 14–16 (14.7).<sup>1</sup>

*Adult female*.—Length (skins), 167.6–177.8 (177.3); wing, 90.2–93 (91.7); tail, 76.2–80.5 (78.7); exposed culmen, 16.5–18 (17.5); depth of bill at base, 9.4–9.7; tarsus, 21.8–22.4 (22.1); middle toe, 14.5–14.7.<sup>2</sup>

Eastern Mexico, in States of Nuevo Leon (Monterey), Vera Cruz (Jalapa; Mirador), and southward through Central America to Chiriqui and Veragua.

*Pyrranga bidentata* (not of Swainson) SCLATER, Proc. Zool. Soc. Lond., 1856, 126, part (Jalapa, Vera Cruz); 1857, 205 (Jalapa); 1859, 364 (Jalapa); Synop. Av. Tanagr., 1856, 50, part; Cat. Am. Birds, 1862, 82, part (Jalapa; Volcan de Fuego, Guatemala); Cat. Birds Brit. Mus., xi, 1886, 190, part (Jalapa and Orizaba, Vera Cruz; Volcan de Fuego, Dueñas, and Barranca Honda, Guatemala; Irazú and Parita, Costa Rica; s. slope Volcan de Chiriqui, Chiriqui).—SALVIN and SCLATER, Ibis, 1860, 32 (Volcan de Fuego, 5,500 ft.).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 171 (Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 99 (Dota Mts., Birris, San Jose, and Rancho Redondo, Costa Rica).—SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 177 (Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 549 (temperate region, Vera Cruz).—FRANTZIUS, Journ. für Orn., 1869, 299 (Dota Mts., Rancho Redondo, San José, Candelaria, and Cervantes, Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 187 (Volcan de Chiriqui).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (Navarro and Volcan de Irazú, Costa Rica).—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 495 (Irazú, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 296, part (Jalapa, Vera Cruz; Volcan de Fuego, Barranca Honda, and San Gerónimo, Guatemala; Dota Mts.; Rancho Redondo, Barranca, San José, Candelaria, Cervantes, and Birris, Costa Rica; Volcan de Chiriqui).

[*Pyrranga*] *bidentata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.

[*Pyrranga*] *bidentata* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 433, part.

[*Pyrranga*] *bidentata* RIDGWAY, Man. N. Am. Birds, 1887, 456, part.

*Pyrranga bidentata* ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (San José, Cartago, El Zarcero de Alajuela, Volcan de Irazú, and Monte Redondo de San José, Costa Rica).—CHERRIE, Auk, ix, 1892, 25 (San José, Costa Rica; resident).—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 27 (Jalapa; song, etc.).

*Phoenicossoma bidentata* CABANIS, Mus. Hein., i, 1850, 24 (Jalapa).

<sup>1</sup>Seventeen specimens.

<sup>2</sup>Three specimens, from Costa Rica (2) and Chiriqui (1). Average measurements of adult males from different localities are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
Seven adult males from Vera Cruz (5) and Nuevo Leon (2).....	95.3	82.0	17.0	9.4	21.6	15.2
Three adult males from Guatemala.....	97.3	81.3	16.8	9.4	20.6	14.5
Seven adult males from Costa Rica (5) and Chiriqui (2).....	95.8	80.0	16.5	9.7	21.3	14.5

The most richly colored specimens seen are from Jalapa, Vera Cruz.

[*Phoenicerosoma*] *bidentatum* GIEBEL, Thesaurus Orn., iii, 1876, 110, part.

*Pyrranga sanguinolenta* LAFRESNAYE, Rev. Zool., 1830, 97 (Mexico; coll. Cha Brelay).—BONAPARTE, Consp. Av., i, 1850, 241.

*Pyrranga* *sanguinolenta* GRAY, Gen. Birds, ii, 1844, 364.

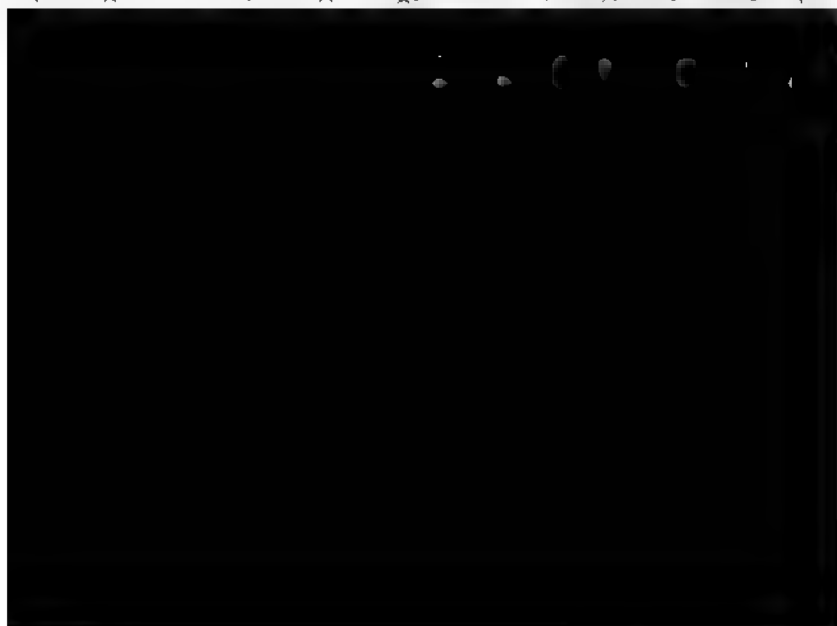
*Piranga sanguinolenta* NELSON, Auk, xv, 1898, 157, 158, 159 (crit.; des synonymy).

**PIRANGA ROSEO-GULARIS ROSEO-GULARIS Cabot.**

**ROSE-THROATED TANAGER.**

*Adult male*.—Pileum dull brownish red;<sup>1</sup> wings grayish brown w broad edgings of brownish red (nearly brick red), the lesser coverts nearly uniformly of this color; upper tail-coverts and tail brown red (similar to color of wing-edgings); hindneck, back, scapulars, a rump brownish gray, the back and scapulars more or less tinged w dull red; sides of head and neck brownish gray (rather lighter th color of hindneck), becoming paler on malar and orbital regions, t eyelids dull white; anterior portion of chin dull white; lower part chin, throat, and upper part of chest light red (intermediate betw peach-blossom pink and flesh color); under tail-coverts and anal region paler, more flesh colored; rest of under parts light brownish gray becoming dull white on abdomen; maxilla horn brown, paler alor tomia, mandible much paler; legs and feet horn brownish; leng (skins), 144.8-160 (153.2); wing, 76.7-82.6 (80); tail, 63.5-69.3 (67.1) exposed culmen, 14.5-15.2 (15); depth of bill at base, 8.9-10.2 (9.7) tarsus, 20.6-22.1 (21.1); middle toe, 12.2-14 (13).<sup>2</sup>

*Adult female*.—Similar to adult male, but the reddish of pileum wings, and tail replaced by yellowish olive-green, that of throat t pale yellow (naples yellow), the under tail-coverts pale buffy; leng (skins), 150-154 (152.1); wing, 76.2-79 (77.4); tail, 62-64.8 (63.2)



- N. Am. Birds, i, 1874, 434. LAWRENCE, ANN. N. Y. Acad. Sci., ii, 1882, 247 (description of female). BOCCAUD, Proc. Zool. Soc. Lond., 1883, 443. Izalan, i, Yucatan. —SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 293. SCLATER, Cat. Birds Brit. Mus., xi, 1886, 187, part (Chen Jonat forest and Izalan, Yucatan). CHAPMAN, Bull. Am. Mus. N. H., viii, 1888, 279 (Chien Itza, Yucatan; song).  
 [Phoenicogenus] *roseogularis* GIEBEL, Thesaurus Orn., iii, 1876, 110.  
*Piranga* *roseogularis* RIDGWAY, Man. N. Am. Birds, 1887, 455, part (Yucatan).  
*Piranga roseo-gularis roseo-gularis* RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 149, in text.

**PIRANGA ROSEO-GULARIS COZUMELÆ Ridgway.**

**COZUMEL TANAGER.**

Similar to *P. r. roseo-gularis*, but with shorter wing, longer tail, and larger bill and feet; adult male with red of pileum, wings, and tail duller, that of throat and under tail coverts much paler, and the back with little, if any, tinge of red; adult female with olive-green of pileum duller, yellow of throat and under tail-coverts much paler, and gray of lateral under parts browner.

*Adult male.* Length (skins), 153–161 (156.7); wing, 78–80 (79.2); tail, 65–70 (68); exposed culmen, 16–17 (16.2); tarsus, 21–23 (22); middle toe, 14–15 (14.5).<sup>1</sup>

*Adult female.* Length (skins), 152–155 (153.5); wing, 75; tail, 64; exposed culmen, 15–16 (15.5); tarsus, 21–23 (22); middle toe, 13–14 (13.5).<sup>1</sup>

Island of Cozumel, Yucatan. (Also Mugeris Island?)<sup>2</sup>

- Piranga roseogularis* (not of Cabot) SALVIN, Ibis, 1885, 190 (Cozumel I.), 258 (Meco Mugeris, and Cozumel islands, crit.). —SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 293, part (Cozumel, Mugeris, and Meco islands). —SCLATER, Cat. Birds Brit. Mus., xi, 1886, 187, part (Cozumel).  
*Piranga roseogularis* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 568 (Cozumel I.).  
*Piranga* *roseogularis* RIDGWAY, Man. N. Am. Birds, 1887, 455, part (Cozumel I.).  
*Piranga roseogularis cozumelæ* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 149 (Cozumel I., Yucatan; U. S. Nat. Mus.).

**PIRANGA LEUCOPTERA LEUCOPTERA Trudeau.**

**WHITE-WINGED TANAGER.**

*Adult male.* —General color bright vermillion or poppy red, sometimes inclining to scarlet; forehead (more or less broadly), lores, orbital region, anterior portion of malar region (sometimes chin also), scapulars, wings, and tail black; middle and innermost greater wing-coverts broadly tipped with white, forming two distinct bands, that across middle coverts about 3 to 4.6 mm. wide; axillars and under wing-coverts white; maxilla blackish, mandible bluish gray (light grayish blue in

<sup>1</sup>Four specimens.

<sup>2</sup>Two specimens.

<sup>3</sup>See SALVIN, Ibis, 1888, 258. The birds from Meco Island are said by Mr. Salvin to be "somewhat intermediate, being nearer to that from the mainland."

- Kland Coll., 1882, 192 (Guatemala).—SUMICHRAST, Mem. Bost. Soc. Nat. Hist., i, 1869, 549 (temperate region Vera Cruz, 2,000–4,000 feet).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 295, part (Mexican and Guatemalan references and localities; ? Belize, British Honduras).  
 [11] *erythromelana* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.  
 [12] *erythromelana*] var. *erythromelana* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 433, part.  
 [13] *erythromelana*] *erythromelana* GIEBEL, Thesaurus Orn., iii, 1876, 110, part.  
 [14] *leucoptera* TRUDEAU, Journ. Ac. Nat. Sci. Phila., viii, 1839, 160 (Mexico; Acad. Nat. Sci. Phila.).—BONAPARTE, Consp. Av., i, 1850, 241.  
 [15] *leucoptera* RIDGWAY, Man. N. Am. Birds, 1887, 454.  
 [16] *leucoptera* CHAPMAN, Bull. Am. Mus. N. H., x, 1896, 27 (Jalapa, Vera Cruz).  
 [17] *leucosticta* LAFRESNAYE, Rev. Zool., v, 1842, 70 (no locality given).  
 [18] *leucosticta*] *leucosticta* CABANIS, Mus. Hein., i, 1850, 24 (Jalapa; excl. syn.).  
 [19] *leucosticta*] *leucosticta* ardens Tschudi).

**PIRANGA LEUCOPTERA LATIFASCIATA** Ridgway.

**BROAD-BANDED TANAGER.**

Similar to *P. l. leucoptera*, but white wing-bands much broader, the anterior one 5.1–7.6 wide, the posterior one extending across tips of the greater coverts instead of the innermost only.

*Male*.—Length (skins), 125–135 (129); wing, 67–72 (70); tail, 58–62 (58.5); exposed culmen, 12–13 (12.7); depth of bill at base, 11–12 (11.6); tarsus, 18–19 (18.4); middle toe, 11–12 (11.6).<sup>1</sup>

*Female*.—Length (skins), 125–130 (126.6); wing, 65–68.5 (66.6); tail, 54–57 (55.2); exposed culmen, 12–13 (12.5); depth of bill at base, 10–11 (10.7); tarsus, 17.5–18 (17.7); middle toe 11–12 (11.3).<sup>2</sup>

Costa Rica (Barranca; Dota Mountains; Navarro; Tucuriqui), Chiriqui Boquete; Volcan de Chiriqui, and Veragua (Calovevora; Calobre).

*Piranga erythromelana* (not *P. erythromela* Vieillot, nor *Tanager erythromela* Lichtenstein) SALVADORI, Atti Roy. Ac. Sci. Torino, iv, 1868, 177 (Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 99 (Barranca, Dota Mts., and Navarro, Costa Rica).—FRANTZUS, Journ. fur Orn., 1869, 299 (Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 187 (Volcan de Chiriqui; Calovevora, Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 295, part (Tucuriqui, etc., Costa Rica; Calobre, etc., Veragua).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 189, part (Dota, Costa Rica; Volcan de Chiriqui; Calovevora, Veragua).

[*Piranga*] *erythromelana* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.

[*Piranga erythromelana*] var. *erythromelana* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 433, part.

[*Phoenicogonys*] *erythromela* GIEBEL, Thesaurus Orn., iii, 1876, 110, part.

[*Piranga*] *leucoptera latifasciata* RIDGWAY, Man. N. Am. Birds, 1887, 457 (Costa Rica; Veragua; coll. U. S. Nat. Mus.)

*Piranga leucoptera latifasciata* RIDGWAY, Man. N. Am. Birds, 1887, 592; 2d ed., 1896, 614.

*Piranga leucoptera* (not of Trudeau) ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).—CHERRIE, Ank., ix, 1892, 25 (San José, Costa Rica).

<sup>1</sup> Seven specimens.

<sup>2</sup> Four specimens.

## PIRANGA ERYTHROCEPHALA (Swainson.)

## RED-HEADED TAWAGER.

*Adult male*.—Pileum bright red (vermilion or orange-vermilion); rest of upper parts uniform bright yellowish olive-green, the edges of primaries and rectrices more decidedly yellowish; lores blackish; auricular, suborbital, and malar regions, chin, and throat pale vermilion or pinkish red, with a silvery gloss; rest of under parts rich lemon yellow, becoming paler posteriorly (under tail-coverts canary yellow), the sides and flanks tinged with olive-green; edge of wing lemon yellow; bill blackish, the mandible more grayish (bluish gray in life?), legs and feet dusky (in dried skins), length (skins); 147.3–148.6 (147.8); wing, 67.3–74.4 (70.1); tail, 63–69.3 (65.5); exposed culmen, 11.9–12.2; depth of bill at base, 7.4–7.9 (7.6); tarsus, 19.3–20.1 (19.8); middle toe, 11.7–12.4 (12.2.)<sup>1</sup>

*Adult female*.—Pileum yellowish olive-green, becoming yellow (saffron or dull gamboge) on supraloral region; hindneck, back, scapulars, rump, and upper tail-coverts grayish olive-green, more strongly tinged with gray posteriorly; wings and tail clearer olive-green than back, etc., the edges of primaries almost yellow; lores dusky grayish; lower eyelid whitish; auricular region dull grayish; malar region, chin, throat, and chest dull lemon or gamboge yellow, the breast and upper abdomen similar but rather paler; flanks light grayish brown; under tail-coverts and anal region pale buffy; bill and feet as in adult male; length (skins), 132.1–142.2 (138.7); wing, 65.3–68.6 (67.1); tail, 58.9–60.7 (59.7); exposed culmen, 12.7–14 (13); depth of bill at base, 7.6; tarsus, 19.1–20.1 (19.6); middle toe, 11.7–12.7 (12.2.)<sup>2</sup>





[*Phoenicosoma*] *erythrocephalum* GIEBEL, Thesaurus Orn., iii, 1876, 110.

*Pyrranga cucullata* DU RÔY, Bull. Ac. Roy. Brux., xiv, pt. 2, 1847, 105 (Mexico; coll. Brussels Mus.); Rev. Zool., 1848, 245.—BONAPARTE, Consp. Av., i, 1850, 241.

Genus *HETEROSPINGUS* Ridgway.

*Heterospingus* RIDGWAY, Auk, xv, no. 3, July (pub. May 13), 1898, 225. (Type, *Tachyphonus rubrifrons* Lawrence.)

Similar to *Tachyphonus*, but nasal fossæ densely feathered, concealing the nostrils; tail relatively much shorter, wing more pointed, tarsus shorter (scarcely exceeding middle toe with claw), and sexes either alike in color or nearly so in pattern of coloration.

Exposed culmen about six-sevenths as long as tarsus, straight for more than basal half, then strongly curved to the slightly uncinate tip; gonys much shorter than length of maxilla from nostril, slightly convex; depth of bill at base equal to decidedly more than half the distance from nostril to tip of maxilla, about equal to its basal width; maxillary tomium concave anteriorly and subbasally, faintly convex between, distinctly notched subterminally and slightly deflected basally; mandibular tomium straight, the basal portion slightly convex and deflected. Nostril concealed by dense feathering of nasal fossæ, horizontally oval. Rictal bristles scarcely obvious. Wing long (about four times as long as tarsus), slightly rounded (eighth to sixth primaries longest and nearly equal, ninth a little shorter than fifth); primaries exceeding secondaries by nearly the length of the tarsus. Tail shorter than wing by length of tarsus, slightly double-rounded, the rectrices broad, with compact webs and rounded tips. Tarsus stout, very slightly longer than middle toe with claw; lateral claws reaching about to base of middle claw, the inner toe a little shorter than the outer; hind claw shorter than its digit—all the claws strongly curved and sharp.

*Coloration*.—Rump bright yellow, underwing-coverts and patch on each side of breast white; rest of plumage black, with orange-red supra-auricular tufts (*H. xanthopygius*, adult male), or dark slate-gray above, lighter gray beneath (*H. xanthopygius*, female, and both sexes of *H. rubrifrons*).

*Range*.—Costa Rica to Colombia. (Two species.)

KEY TO THE SPECIES OF *HETEROSPINGUS*.

- a. General color black, more sooty beneath; supra-auricular tufts orange-red. (Colombia and western Ecuador.)

*Heterospingus xanthopygius*, adult male (p. 104)

- aa. General color slate-gray above, paler gray below; no supra-auricular tufts. (Isthmus of Panama to Costa Rica.)

*Heterospingus rubrifrons*, adult male and female (p. 104)

*Heterospingus xanthopygius*, female.<sup>1</sup>

<sup>1</sup>Not having seen the female of *H. xanthopygius*, I am unable to state in what particulars, if any, it differs from *H. rubrifrons*.

## HETEROSPINGUS XANTHOPYGIUS (Sclater).

## ORANGE-BROWED TANAGER.

*Adult male*.—Above black, relieved by a prominent and conspicuous supra-auricular tuft of orange or orange-red, composed of stiff, like feathers, and a triangular patch of lemon yellow on rump; under parts more sooty black, more grayish sooty on under parts of breast relieved by a white patch on each side of breast, confluent with that of axillars and under wing-coverts; bill blackish; legs and feet (dried skin) dusky; length (skin), 172.7; wing, 96.5; tail, 71.1; culmen (tip of bill broken off); depth of bill at base, 9.7; tarsus, 21.1; middle toe, 15.2.<sup>1</sup>

Northwestern and central Colombia and western Ecuador; not the Rio Truando.

*Tachyphonus xanthopygius* SCLATER, Proc. Zool. Soc. Lond., 1854, 158, (Bogota, Colombia; coll. Brit. Mus.; = female); 1855, 83, pl. 90 (Bogota male, figured); 1856, 116 (monogr.; Bogota); Synop. Av. Tanagr., 18 Cat. Birds Brit. Mus., xi, 1886, 209, part (Bogota and Remedios, Antioquia, Colombia).—CAMBIE, Proc. Ac. Nat. Sci. Phila., 1860, 14 (Rio Truando, n. Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond. 503 (Remedios, prov. Antioquia, Colombia).—BERLEPSCH and TACZAN, Proc. Zool. Soc. Lond., 1883, 547 (Chimbo, w. Ecuador).—SALVIN and MAYNARD, Biol. Centr.-Am., Aves, i, 1883, 311, part (Rio Truando, Colombia).—[*Tachyphonus*] *xanthopygius* SCLATER and SALVIN, Exotic Orn., pt. v, 1868 [*Tachyphonus*] *xanthopygius* SCLATER and SALVIN, Nom. Av. Neotr., 1868, part.

*Lanio auritus* DU BOIS, Bull. Ac. Roy. Brux., xxii, Feb., 1855, 153 (Colombia).

## HETEROSPINGUS RUBRIFRONS (Lawrence).

## LAWRENCE'S TANAGER.



*Adult female*.—Similar to the male, but gray of under parts duller and rather lighter and less tinged with olive-yellow posteriorly, the inner tail-coverts usually with very little of this color, sometimes none. Length (skins), 144.8; wing, 77.7-82.6 (80); tail, 57.2-61 (59.2); exposed culmen, 16.5-17.3 (16.8); depth of bill at base, 7.4-8.4 (7.9); tarsus, 19.8-20.1 (19.8); middle toe, 12.4-13.2 (12.7).<sup>1</sup>

Isthmus of Panama to Costa Rica (Angostura; Reventazon); south to the Panama Railroad.

*Tachyphonus tachophonus* (not of Sclater) LAWRENCE, Ann. Lyc. N. Y., vii, 1864, 81 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 351 (Lion Hill). SALVIN and GODMAN Biol. Centr.-Am., Avcs., i, 1883, 311, part (Angostura, Costa Rica, Veragua, Lion Hill, Panama R. R.). SCLATER, Cat. Birds Brit. Mus., xi, 1886, 209, part (Panama, Veragua). ZIEGLER, Annu. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).

*T[achyphonus] tachophonus* SALVIN, Ibis, 1870, 109, in text (crit.).

*Tachyphonus rubrifrons* LAWRENCE, Proc. Ac. Nat. Sci. Phila., 1865, 106 (Lion Hill, Panama R. R.; coll. G. N. Lawrence).—RIDGWAY, Proc. U. S. Nat. Mus., xvi, 1893, 610-611 (Angostura and Reventazon, Costa Rica, crit.).

*T[achyphonus] rubrifrons* SCLATER and SALVIN, Exotic Orn., pt. v, 1868, 68.

*Heterophonus rubrifrons* BANCOS, Proc. New Engl. Zool. Club, ii, Sept. 20, 1900, 29 (Loma del Loro, Panama R. R.).

*Tachyphonus propinqua* LAWRENCE, Proc. Ac. Nat. Sci. Phila., 1867, 94 (substitute for *T. rubrifrons*, considered inappropriate as being based on an accidental character), Ann. Lyc. N. Y., ix, 1868, 101 (Angostura, Costa Rica).—FRANKLIN, Journ. fur Orn., 1869, 239 (Costa Rica). SALVIN, Ibis, 1870, 109 (crit.).

#### Genus HEMITHRAUPIS Cabanis.

*Hemithraupis*\* CABANIS, Mus. Hein., i, 1850, 21. (Type, *Nimona ruficapilla* Vieillot.)

Similar to *Tachyphonus*, but bill much more slender, its depth at base decidedly less than half the length of exposed culmen; wing more pointed (outermost primary longer than fifth); tail relatively shorter, tarsus relatively much longer, toes weaker, and style of coloration very different.

Exposed culmen longer than middle toe without claw, nearly straight to near the tip, where gently decurved; gonys decidedly shorter than maxilla from nostril, straight; maxillary tomium with slight subterminal notch, straight or very faintly concave to beneath anterior end of nasal fossae, thence gently deflected to the rictus; mandibular tomium straight to the decided though not abrupt basal deflection. Nostril exposed, broadly oval, with rather broad superior membrane. Rectal bristles distinct, but not conspicuous. Wing rather long (nearly to more than four times as long as tarsus), rather pointed (eighth or seventh primary longest, ninth not shorter than fifth, sometimes equal to seventh); primaries exceeding secondaries by nearly to much more than length of exposed culmen. Tail shorter than wing by about two-

\*Three specimens.

<sup>1</sup> "Von nur, halb und zweimal, noch prop."

## HETEROSPINGUS XANTHOPYGIUS (Sclater).

## ORANGE-BROWED TANAGER.

*Adult male*.—Above black, relieved by a prominent and conspicuous supra-auricular tuft of orange or orange-red, composed of stiff, hair-like feathers, and a triangular patch of lemon yellow on rump; underparts more sooty black, more grayish sooty on under parts of body relieved by a white patch on each side of breast, confluent with white of axillars and under wing-coverts; bill blackish; legs and feet (dried skin) dusky; length (skin), 172.7; wing, 96.5; tail, 71.1; culmen (tip of bill broken off); depth of bill at base, 9.7; tarsus, 21.1; middle toe, 15.2.<sup>1</sup>

Northwestern and central Colombia and western Ecuador; north of the Rio Truando.

*Tachyphonus xanthopygius* SCLATER, Proc. Zool. Soc. Lond., 1854, 158, pl. (Bogota, Colombia; coll. Brit. Mus.; = female); 1855, 83, pl. 90 (Bogota; adult male, figured); 1856, 116 (monogr.; Bogota); Synop. Av. Tanagr., 1856, 4 (Cat. Birds Brit. Mus., xi, 1886, 209, part (Bogota and Remedios, prov. Antioquia, Colombia).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 142 (Rio Truando, n. Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1875, 503 (Remedios, prov. Antioquia, Colombia).—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 547 (Chimbo, w. Ecuador).—SALVIN and GOODMAN, Biol. Centr.-Am., Aves, i, 1883, 311, part (Rio Truando, Colombia). *T[achyphonus] xanthopygius* SCLATER and SALVIN, Exotic Orn., pt. v, 1888, 68. *[Tachyphonus] xanthopygius* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 1, part.

*Lanius auritus* DU BUS, Bull. Ac. Roy. Brux., xxii, Feb., 1855, 153 (Colombia)

## HETEROSPINGUS RUBRIFRONS (Lawrence).

## LAWRENCE'S TANAGER.

*Adult male*.—Above plain sooty slate color,<sup>2</sup> relieved by a lar-



*Adult female*.—Similar to the male, but gray of under parts duller and rather lighter and less tinged with olive-yellow posteriorly, the under tail-coverts usually with very little of this color, sometimes none; length (skins), 144.8; wing, 77.7–82.6 (80); tail, 57.2–61 (59.2); exposed culmen, 16.5–17.3 (16.8); depth of bill at base, 7.4–8.4 (7.9); tarsus, 19.8–20.1 (19.8); middle toe, 12.4–13.2 (12.7).<sup>1</sup>

Isthmus of Panama to Costa Rica (Angostura; Reventazon); south to the Panama Railroad.

*Tachyphonus xanthopygius* (not of Sclater) LAWRENCE, Ann. Lyc. N. Y., vii, 1864, 331 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 351 (Lion Hill).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 311, part (Angostura, Costa Rica; Veragua; Lion Hill, Panama R. R.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 209, part (Panama; Veragua).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).

*T[achyphonus] xanthopygius* SALVIN, Ibis, 1870, 109, in text (crit.).

*Tachyphonus rubrifrons* LAWRENCE, Proc. Ac. Nat. Sci. Phila., 1865, 106 (Lion Hill, Panama R. R.; coll. G. N. Lawrence).—RIDGWAY, Proc. U. S. Nat. Mus., xvi, 1893, 610, 611 (Angostura and Reventazón, Costa Rica; crit.).

*T[achyphonus] rubrifrons* SCLATER and SALVIN, Exotic Orn., pt. v, 1868, 68.

*Heterospingus rubrifrons* BANGS, Proc. New Engl. Zool. Club, ii, Sept. 20, 1900, 29 (Loma del Leon, Panama R. R.).

*Tachyphonus propinquus* LAWRENCE, Proc. Ac. Nat. Sci. Phila., 1867, 94 (substitute for *T. rubrifrons*, considered inappropriate as being based on an accidental character); Ann. Lyc. N. Y., ix, 1868, 101 (Angostura, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 299 (Costa Rica).—SALVIN, Ibis, 1870, 109 (crit.).

#### Genus HEMITHRAUPIS Cabanis.

*Hemithraupis*<sup>2</sup> CABANIS, Mus. Hein., i, 1850, 21. (Type, *Nemosia ruficapilla* Vieillot.)

Similar to *Tachyphonus*, but bill much more slender, its depth at base decidedly less than half the length of exposed culmen; wing more pointed (outermost primary longer than fifth); tail relatively shorter, tarsus relatively much longer, toes weaker, and style of coloration very different.

Exposed culmen longer than middle toe without claw, nearly straight to near the tip, where gently decurved; gonys decidedly shorter than maxilla from nostril, straight; maxillary tomium with slight subterminal notch, straight or very faintly concave to beneath anterior end of nasal fossæ, thence gently deflected to the rictus; mandibular tomium straight to the decided though not abrupt basal deflection. Nostril exposed, broadly oval, with rather broad superior membrane. Rictal bristles distinct, but not conspicuous. Wing rather long (nearly to more than four times as long as tarsus), rather pointed (eighth or seventh primary longest, ninth not shorter than fifth, sometimes equal to seventh); primaries exceeding secondaries by nearly to much more than length of exposed culmen. Tail shorter than wing by about two-

<sup>1</sup> Three specimens.

<sup>2</sup> "Von *ημι*, halb und *σπαυπις*, nom. prop."

thirds to much more than length of tarsus, slightly rounded, even, or faintly emarginate, the rectrices rather narrow, with compact webs and rather pointed tips. Tarsus slender, decidedly longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw shorter than its digit, strongly curved.

*Coloration*.—Adult males with more or less of yellow, varied in uniform areas with black, rufous, or olive-green, or with all these; females and young very different—plain olive or olive-green above, yellowish beneath.

*Range*.—Costa Rica to Paraguay, Bolivia, and Peru.

Although having the bill a little more slender, *H. chrysomelas* (the only species known to occur north of the Isthmus) differs far less from some of the species of *Hemispingus* than certain of the latter do from one another, and I have no doubt that here is its proper position. It certainly is far more out of place in *Tachyphonus*, to which it was originally assigned and where it has by common consent been kept.

*Hemithraupis* differs from *Nemosia*<sup>1</sup> in relatively longer wing and tail, more slender bill with straight instead of distinctly convex gonys, and very different style of coloration.

#### HEMITHRAUPIS CHRYSOMELAS (Sclater and Salvin).

##### BLACK AND YELLOW Tanager.

*Adult male*.—Entire head, neck, rump, and under parts clear, rich yellow, rather paler (lemon yellow) below, sometimes inclining to orange on pileum and hindneck; a narrow orbital ring of black, broadest beneath posterior half of eye; back, scapulars, wings, upper tail-coverts, and tail uniform deep black; inner webs of rectrices edged

Proc. Zool. Soc. Lond., 1870, 188 (Cordillera del Chucu).—SALVIN and GOMMAN, Bol. Contr. Am., Aves, i, 1883, 311, pl. 21, fig. 1. SCLATER, Cat. Birds Brit. Mus., xi, 1886, 210.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).

[*Tachophonus*] *chrysomelas* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23.

#### Genus RAMPHOCELUS Desmarest.

*Ramphocelus* DESMAREST, Hist. Nat. Tanig., 1805, p. 5, sub pls. 28, 29. (Type, *Tanagra brasiliensis* LINNÆUS.)

*Ramphocelus* (emendation) SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.

*Ramphopsis* VIEILLANT, Analyse, 1816, 32. (Type, *Tanagra jacupa* LINNÆUS.)

*Jacupa* BONAPARTE, Rev. et Mag. de Zool., iii, Mar., 1851, 178. (Type, *Tanagra jacupa* LINNÆUS.)

Medium sized Tanagers with outermost (ninth) primary shorter than third, plumage of forehead stiff, erect, and plush like, and with mandibular rami more or less enlarged and swollen, longer than gonys; adult males richly colored with black and crimson, scarlet, orange, or yellow.

Bill shorter than head, elongate-conical in vertical profile; culmen usually about two-thirds as long as tarsus or a little more (considerably less in *R. passerinii* and allies), nearly straight for basal half or more, distinctly convex terminally, the tip of the maxilla obviously uncinat; gonys decidedly shorter than length of maxilla from nostril, less convex than terminal portion of culmen; commissure nearly straight; *mandibular rami remarkably enlarged* (less so in *R. passerinii* and allies), much longer than gonys (except in the species mentioned), developed into a broad thickened plate, more or less rounded behind, usually differently colored (whitish or pale blue) from rest of bill. Nostril small, nearly concealed by plush like frontal feathers. Rictal bristles not obvious. Wing rather short (about three and one-half to three and four-fifths times as long as tarsus), rounded (seventh to fifth primaries longest, ninth shorter than third); primaries exceeding secondaries by less than length of exposed culmen. Tail nearly as long as wing, rounded, the rectrices rather broad, with firm webs and rounded tips, less than the basal half overlaid by upper coverts. Tarsus equal to or longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw shorter than its digit; all the claws well-curved, sharp. Plumage soft, velvety; feathers of forehead erect, somewhat stiffened, plush like.

*Coloration*.—Adult males black and scarlet, black and maroon, black, crimson, and scarlet, or black and yellow, in large unicolorous areas; females and young much duller, with the black replaced by brown, brownish-gray, or olive, the brighter colors obsolete or faintly indicated.

*Range*.—Continental Tropical America, from southern Mexico to southern Brazil, Bolivia, and Peru.

## KEY TO THE SPECIES AND SUBSPECIES OF RAMPHOCELUS.

- a. Wings and tail black. (Adult males.)
- b. Under parts of body entirely black.
- c. Lower back, rump, and upper tail-coverts scarlet.
  - d. Smaller (wing averaging 74.9). (Southeastern Mexico to Isthmus of Panama.) ..... *Ramphocelus passerinii*, adult male (p. 109)
  - dd. Larger (wing averaging 79.0). (Southwestern Costa Rica.)  
*Ramphocelus costaricensis*, adult male (p. 111)
- cc. Lower back, rump, and upper tail-coverts yellow or orange.
  - d. Rump, etc., orange.
    - e. Under wing-coverts black. (Colombia.)  
*Ramphocelus chrysnotus*, adult male (extralimital) (p. 112)
    - ee. Under wing-coverts orange?<sup>1</sup> (Isthmus of Panama.)  
*Ramphocelus chrysopterus*, adult male (p. 112)
    - dd. Rump, etc., lemon yellow. (Isthmus of Panama to Ecuador.)  
*Ramphocelus icteronotus*, adult male (p. 112)
- bb. Under parts of body partly red or yellow.
  - c. Under parts, except chin, abdomen, and thighs, yellow. (Isthmus of Panama)  
*Ramphocelus inexpectatus*, adult male (p. 111)
  - cc. Under parts, except chin, throat, chest, and abdomen, red, or else black with a red band across chest.
    - d. Head and neck velvety black without any reddish tinge; under parts black with a red band across chest and the anal feathers red. (Chiriqui.)  
*Ramphocelus festus*, adult male (p. 111)
    - dd. Head and neck dark garnet red, or at least tinged or washed with this color; under parts mostly red.
  - e. Red feathers of rump and under parts and tail-coverts without central spots of black.
  - f. Back black or but slightly tinged with dark garnet red.
    - g. Under parts of body scarlet ("orange-crimson") anteriorly, passing into rufous-orange posteriorly; basal half of feathers of rump and upper tail-coverts white. (Isthmus of Panama?)  
*Ramphocelus dunstalli*, adult male (p. 115)



*hh.* Colors duller, the abdomen brownish black or dark brown; tail longer (averaging 73.9). (Isthmus of Panama.)

***Ramphocelus dimidiatus isthmicus***, adult male (p. 118)

*gg.* Abdomen with dusky (not black) area much restricted, sometimes obsolete; general coloration lighter; greater wing-coverts edged with dusky red. (San Miguel Island, Bay of Panama.)

***Ramphocelus dimidiatus limatus***, adult male (p. 119)

*ee.* Red feathers of rump and under parts and tail coverts with central spots of black. ("Guatemala.")

***Ramphocelus uropygialis***, adult male (p. 119)

*ai.* Wings and tail dusky with lighter (grayish, brownish, dull reddish or light olive or olive-greenish) edgings. (Adult females and immature males.)

*b.* Throat grayish or pale brownish; rest of under parts yellowish olive or light tawny-olive.

*c.* Rump and upper tail-coverts light yellowish olive.

***Ramphocelus passerinii***, adult female and young male (p. 110)

*cc.* Rump and upper tail-coverts orange-rufous.

***Ramphocelus costaricensis***, adult female and young male (p. 111)

*bb.* Throat not grayish; under parts of body not olive.

*c.* Throat, under parts of body, and rump yellow (lemon or sulphur).

***Ramphocelus icteronotus***, adult female and young male (p. 113)

*cc.* Throat brown or maroon; under parts of body brownish red or ochraceous-orange.

*d.* Rump and under parts ochraceous-orange; back light olive; head and neck (all round) olive.

***Ramphocelus luciani***, adult female and young male (p. 116)

*dd.* Rump and under parts brownish red; back reddish brown; head and neck (all round) warm sepia brown or dark reddish brown.

*e.* Throat maroon; back deeper reddish brown; rump and under parts of body deeper brownish red.

***Ramphocelus melanogaster***, adult female and young male (p. 116<sup>1</sup>)

*ee.* Throat dark sooty brown or seal brown; back lighter reddish brown; rump and under parts of body lighter brownish red.

*f.* Head and neck dark sooty brown, the general coloration darker and richer.

***Ramphocelus dimidiatus dimidiatus***, adult female and young male (p. 117)

*ff.* Head and neck seal brown, the general coloration lighter and duller.

*g.* Larger (wing averaging 75.9, tail 72.1, tarsus 21.3).

***Ramphocelus dimidiatus isthmicus***, adult female and young male (p. 118)

*gg.* Smaller (wing averaging 74.4, tail 66.5, tarsus 20.1).

***Ramphocelus dimidiatus limatus***, adult female and young male (p. 119)

#### **RAMPHOCELUS PASSERINII Bonaparte.**

##### **PASSERINE'S TANAGER.**

*Adult male.*—Uniform glossy black; entire lower back, rump, and upper tail-coverts bright, intense scarlet, the feathers white for basal half, with yellow between the white and scarlet; bill light blue in life (grayish in dried skins) with tip black; iris brown; legs and feet dusky grayish in dried skins (grayish blue in life?); length (skins), 148.6–165.1 (157.2); wing, 71.4–78.2 (74.9); tail, 64–74.2 (68.3); exposed culmen, 12.4–14.7 (13.5); depth of bill at base, 7.4–8.1 (7.9); tarsus, 21.3–23.4 (22.4); middle toe, 13.5–16.8 (15).<sup>2</sup>

<sup>1</sup> In footnote.

<sup>2</sup> Twenty-four specimens.

*Adult female*.—Pileum and hindneck plain brownish gray or grayish brown; back and scapulars deep yellowish olive, the feathers indistinctly darker centrally; lower back, rump, and upper tail-coverts lighter, more yellowish olive, inclining to dull gallstone yellow; wings and tail dusky with yellowish-olive edgings; sides of head and neck similar to pileum and hindneck, but paler and rather browner, the chin and throat still paler (very nearly hair brown); under parts light yellowish olive, brightest on chest,<sup>1</sup> duller on abdomen, where sometimes inclining to hair brown; bill, iris, and feet as in adult male; length (skins), 154.9–172.7 (160.3); wing, 72.1–78.7 (74.7); tail, 66.8–73.4 (69.6); exposed culmen, 12.7–15.2 (13.7); depth of bill at base, 7.6–8.1 (7.9); tarsus, 21.6–22.9 (22.6); middle toe, 13.7–16 (14.7).<sup>2</sup>

*Young male (first year)*.—Exactly like the adult female.

Immature males variously intermediate in coloration between the adult male and female, according to age.<sup>3</sup>

State of Tabasco (Teapa), southeastern Mexico, eastern Guatemala (Yzabal, Tucuru, Cahabon, etc.), and southward to Isthmus of Panama.

*Ramphocelus passerinii* BONAPARTE, Antologia, 1831, no. 130, p. 3 (Mexico or Cuba); Isis, 1833, 755 ("Cuba"); Consp. Av., i, 1850, 242 ("Bolivia").—LESSON, Rev. Zool., 1840, 133, excl. syn.—SCLATER, Proc. Zool. Soc. Lond., 1858, 130 (monogr.; "Columbia River, Oregon"; "Mexico"; Guatemala; Nicaragua), 142 (Chiriqui); 1859, 59 (Omoa, Honduras); Synop. Av. Tanagr., 1859, 54; Cat. Am. Birds, 1862, 79 (Nicaragua; Honduras).—MOORE, Proc. Zool. Soc. Lond., 1859, 59 (Omoa, Honduras).—SALVIN, Ibis, 1859, 467 (Yzabal, Guatemala); 1870, 187 (Bugaba, Chiriqui; Mina de Chorchá, Veragua); 1872, 316 (Chontales, Nicaragua).—SCLATER and SALVIN, Ibis, 1859, 5, 16 (Yzabal, Atlantic coast, and Cahabon, Vera Paz, Guatemala); Proc. Zool. Soc. Lond., 1867, 278 (Mosquito coast, Nicaragua); 1870, 836 (San Pedro,

- Honduras).—SALVIN and SCLATER, *Ibis*, 1860, 32 (Yzabal).—CABANIS, *Journ. Orn.*, 1860, 330 (Costa Rica).—TAYLOR, *Ibis*, 1860, 111 (Atlantic coast Honduras).—LAWRENCE, *Ann. Lyc. N. Y.*, viii, 1865, 176 (David, Chiriqui), 180 (Greytown, Nicaragua); ix, 1868, 99 (Angostura, San Carlos, and Navarro, Costa Rica).—STIMPSON, *Trans. Chicago Ac. Sci.*, i, 1868, 128, pl. 16.—FRANTZUS, *Journ. für Orn.*, 1869, 299 (Angostura, San Carlos, Navarro, Mosi, Sarapiquí, and Tucurriqui, Costa Rica).—BOUCARD, *Proc. Zool. Soc. Lond.*, 1878, 55 (San Carlos and Naranjo, Costa Rica).—RIDGWAY, *Proc. U. S. Nat. Mus.*, x, 1888, 565 (Segovia R., Honduras).—ZELEDON, *Anal. Mus. Nac. Costa Rica*, i, 1887, 109 (Navarro de Cartago, Naranjo de Cartago, Jiménez, and Esparto, Costa Rica).—RICHMOND, *Proc. U. S. Nat. Mus.*, xvi, 1903, 489 (Rio Escondido; habits; descr. nest and eggs).—NUTTING, *Proc. U. S. Nat. Mus.*, v, 1882, 391 (bet. San José and Punta Arenas, Costa Rica), 489 (San José).
- Amphocelus passerinii* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 21.
- Amphocelus passerinii* SALVIN, *Proc. Zool. Soc. Lond.*, 1867, 138 (David, Chiriqui).—BOUCARD, *Liste Ois. Gaut.*, 1878, 33.—NUTTING, *Proc. U. S. Nat. Mus.*, vi, 1883, 399 (Los Sábales, Nicaragua; habits).
- Amphocelus passerinii* SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1883, 281, pl. 18, fig. 1 (Belize and Belize R., British Honduras; Tururu, etc., Guatemala; Barranca, etc., Costa Rica; Vivala, etc., Veragua; etc.).—SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 170.
- Rhamphocelus passerinii* LAFRENNAYE, *Mag. de Zool.*, 1837, 2<sup>e</sup> classe, not. 81 (p. 3) (description).—SALVADORI, *Atti Roy. Ac. Sci. Torino*, iv, 1868, 177 (Costa Rica).
- Rhamphopsis passerinii* BONAPARTE, *Notes Orn. Coll. Delattre*, 1854, 52.
- Rhamphopsis flamigerus* (not of Jarline and Selby) BAIRD, in *Stansbury's Rep. Gt. Salt Lake*, 1852, 330 ("Columbia R., Oregon").

#### RAMPHOCELUS COSTARICENSIS Cherrie.

##### CHERRIE'S Tanager.

Similar to *R. passerinii* but larger; adult female and immature male very different from those of *R. passerinii*, having the lower back, rump, and upper tail-coverts, as well as the chest "ochraceous-rufous" or rufous-orange, the chest sometimes orange chrome.

*Adult male*.—Intense velvety black, the whole lower back, rump, and upper tail-coverts bright, pure, intense scarlet, the feathers with basal half pure white and with a yellow bar between the white and scarlet; bill grayish blue, with black tip; legs and feet grayish blue (dusky in dried skins).

*Adult female*.—"Above, whole head varying from a dusky slate black to a slate gray; back and scapulars dusky yellowish olive; rump and upper tail-coverts ochraceous-rufous of varying intensity in the different specimens. Wings dusky brownish black, inner webs of quills darkest; tail blackish. Below, chin and throat grayish; breast ochraceous-rufous like the rump; the rest of lower parts yellowish olive, darker along the sides. Bill black with plumbeous base. Feet, dark plumbeous." (Cherrie.<sup>1</sup>)

<sup>1</sup> The description quoted is given for both the adult female and the immature (at that time erroneously supposed to be the adult) male.

*Immature male*.—Similar in color to the adult female.<sup>1</sup> Wing, 77.7–80.3 (78.7); tail, 67.3–72.9 (70.4); exposed culmen, 14.7–16 (15.5); nostril to tip of maxilla, 12.7; tarsus, 22.1–23.4 (22.9).<sup>2</sup>

*Adult female*.—Wing, 77.5–79.8 (78.5); tail, 69.6–74.2 (71.1); exposed culmen, 14.7–16 (15.2); nostril to tip of maxilla, 12.7; tarsus, 21.6–23.9 (22.6).<sup>3</sup>

Southwestern Costa Rica (Pozo Azul; Boruca; Palmar; Buen Aires; Navarro).

*Ramphocelus costaricensis* CHERRIE, Auk, viii, Jan., 1891, 62 (Pozo Azul, s. w. Costa Rica; coll. Costa Rica Nat. Mus.); Proc. U. S. Nat. Mus., xiv, 1891, 531 (Navarro, Costa Rica; crit.).

*Ramphocelus costaricensis* (CHERRIE, Auk, x, 1893, 278 (Boruca, Palmar, and Buen Aires, s. w. Costa Rica; habits, song, etc.; descr. adult male).

#### RAMPHOCELUS CHRYSOPTERUS Boucard.

##### GOLDEN-WINGED TANAGER.

*Adult male*.—"Upper and under side velvety black; tail and wing, brownish black underside [of wings and tail?], rump and upper tail-coverts magnificent topaz orange; bill, bluish. Total length, 158.7; wing, 82.5; tail, 76.2; bill, 19." (Original description.)

Isthmus of Panama.

It is quite impossible to tell from the very unsatisfactory description quoted above just what the characters of this species are. Judging from the name it would seem that there must be some orange or yellow about the wings, but the description does not say so; possibly by "underside" (second mention of this term) is meant the under wing-coverts. Should there be really yellow on the wings, even on the underside, the species would be distinct enough. Otherwise, it seems to resemble *D. melanotus* from central Colombia, which, however,

RAMPHOCELUS ICTERONOTUS Bonaparte.

YELLOW-RUMPED TANAGER.

*Adult male*.—Intense glossy black; whole lower back, rump, and upper tail-coverts rich pure lemon yellow, the yellow feathers with basal half pure white; bill pale blue (darker, more plumbeous in dried skins) with black tip; iris red;<sup>1</sup> legs and feet grayish dusky (bluish in life); length (skins), 147.3–190.5 (169.9); wing, 78.7–88.6 (84.1); tail, 69.6–78.7 (73.9); exposed culmen, 14.7–16.8 (15.2); depth of bill at base, 8.1–9.4 (8.9); tarsus, 22.9–24.9 (23.9); middle toe, 15.5–17.3 (16.5).<sup>2</sup>

*Adult female*.—Pileum, hindneck, back, and scapulars dusky olive, the scapulars and interscapulars, in fresh plumage, margined with yellowish olive; lower back, rump, and upper tail-coverts clear yellow (lemon or canary), the feathers with basal portion grayish; wings and tail dusky, the wing-coverts and tertials margined with light olive or yellowish olive; underparts yellow (canary or sulphur), deeper (lemon or deep canary) on chest, paler (sometimes dull whitish) on chin; bill, iris, legs, and feet as in adult male; length (skins), 152.4–174 (160.3); wing, 75.7–82.8 (79.2); tail, 69.3–79 (72.4); exposed culmen, 13–15.5 (14.7); depth of bill at base, 7.9–8.6 (8.1); tarsus, 22.1–24.4 (23.4); middle toe, 15.5–17 (16).<sup>3</sup>

*Young male in first year*.—Exactly like the adult female in coloration.

*Immature male*.—Variously intermediate, according to age, between the adult male and female.

Veragua (Santiago) through western and central Colombia to west-

<sup>1</sup> According to Sclater, Proc. Zool. Soc. Lond., 1859, 139.

<sup>2</sup> Ten specimens.

<sup>3</sup> Five specimens.

Specimens from western Ecuador average larger than those from the Isthmus of Panama, but the difference is by no means constant, and I am not able to detect any constant difference in coloration, though some adult males from Guayaquil have the rump paler yellow (canary yellow) than any examined from the isthmus. Average measurements are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Six adult males from Isthmus of Panama.....	82.8	72.6	15.0	8.6	23.4	16.3
Four adult males from western Ecuador (Guaya- quil) .....	86.4	76.2	15.7	8.9	24.6	17.0
FEMALES.						
Four adult females from Isthmus of Panama .....	78.5	70.6	14.5	8.1	23.1	16.0
One adult female from western Ecuador (Guaya- quil) .....	82.0	79.0	15.2	8.1	23.9	15.7

ern and central Ecuador (Guayaquil; Pallatanga; Babahoyo; Nanegal; Chimbo; Cayandeled; Pinampunga; Santa Rita; Quito), and central Peru.

*Ramphocelus icteronotus* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 121 ("Mexico and South America"); Rev. Zool., i, 1838, 8 (redescribed).—LAFRESNAYE, Rev. Zool., ix, 1846, 365, 366 (redescribed; crit.; Colombia, Bolivia?).—SCLATER, Proc. Zool. Soc. Lond., 1855, 157 (Bogota, Colombia); 1856, 131 (monogr.; Buenaventura and Choco Bay, w. Colombia; Guayaquil and near Quito, Ecuador); 1859, 139 (Pallatanga, w. Ecuador); 1860, 65 (Pallatanga), 86 (Nanegal, w. Ecuador), 274 (Babahoyo, w. Ecuador); Synop. Av. Tanagr., 1856, 55; Cat. Am. Birds, 1862, 80 (Nanegal, w. Ecuador).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 141 (Turbo, Rio Atrato, and Rio Truand, n. w. Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 2 (Lion Hill).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1877, 332 (centr. Peru).—ROBINSON, Flying Trip to Tropics, 1895, 161 (Puerto Berrio, n. Colombia).

*Ramphocelus icteronotus* CABANIS, Mus. Hein., i, 1850, 26 (Colombia).  
*Ramphocelus icteronotus* SALVIN, Proc. Zool. Soc. Lond., 1867, 139 (Santiago, Veragua).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 501 (Antioquia, Colombia).—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 546 (Chimbo, w. Ecuador; crit.); 1884, 298 (Cayandeled and Pinampunga, w. Ecuador).—ALLEN, Bull. Am. Mus. N. H., ii, 1889, 71 (Quito, Ecuador).

[*Ramphocelus*] *icteronotus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.

*Ramphocelus icteronotus* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 282.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 177 (Santiago, Veragua, Paraiso Station and Panama, Panama R. R.; Choco Bay, Sallango, "Bogota," Remeshos, and Medellin, prov. Antioquia, Colombia; Guayaquil, Pallatanga, Nanegal, and Santa Rita, w. Ecuador).—STONE, Proc. Ac. Nat. Sci. Phila., 1899, 307 (Ibague, centr. Colombia).—SALVADORI and FESTA, Boll. Mus. Zool. etc., Torino, xv, no. 357, 1899, 18 (Guala, Vinces, Intac, and Foreste del Rio Peripa, w. Ecuador; crit.).

*Ramphocelus icteronotus* GRAY, Gen. Birds, ii, 1844, 303.

*Ramphocelus icteronotus* DU RUISE, Orn., 1845, pl. 15 (Guayaquil).

**RAMPHOCELUS FESTAE** Salvadori.**FESTA'S TANAGER.**

*Adult male*.—Velvety black; lower back, rump, and upper tail-coverts scarlet; upper breast with a broad transverse semilunar band of dull red; sides tinged with red; anal feathers scarlet; bill plumbeous, feet black. Total length, 165; wing, 80; tail, 72; culmen, 15; tarsus, 22.

*Habitat*.—Chiriqui, Central America.

Similar to *Ramphocelus passerinii*, but much smaller, and distinguished by the transverse band of red on upper breast, the sides tinged with red, and the anal feathers red. (Translation of original description.)

*Rhamphocoelus festae* SALVADORI, Boll. Mus. Zool. Anat. Comp. Torino, xi, no. 249, July 4, 1896, 1 (Chiriqui; coll. Turin Mus.).

**RAMPHOCELUS DUNSTALLI** Rothschild.**DUNSTALL'S TANAGER.**

*Adult male*.—"Head, neck, and throat black, washed all over with a dull crimson flush. Back, rump, and upper tail-coverts brilliant crimson orange; these feathers with their basal halves white. Wing-coverts, wings, and tail black. Chest orange-crimson. Abdomen, flanks, and under tail-coverts rufous orange; the center of abdomen has the appearance of being intermixed with black, as the feathers there have black instead of white bases, and a few also black tips. Thighs black. Wing, 80; tail, 73.7; tarsus, 20.3; culmen, 16.8.

"Received from Mr. K. Dunstall, after whom I have named it. By the make of the skin it evidently came from Central America, and probably from Panama." (Original description.<sup>1</sup>)

*Rhamphocoelus dunstalli* ROTHSCHILD, Novit. Zool., ii, no. 4, Dec., 1895, 481 (Panama?; coll. Tring Mus.).

**RAMPHOCELUS LUCIANI** Lafresnaye.**BONAPARTE'S TANAGER.**

*Adult male*.—Head and neck all round, upper part of chest, back, scapulars, wings, tail, abdomen, and median portion of breast, chest, under wing-coverts, and axillars black, the neck (sometimes whole head also) and back more or less tinged with dusky red or maroon, sometimes the whole head, neck, upper chest, and back wholly maroon, except on concealed portion of the feathers; lower back, rump, upper tail-coverts, under tail-coverts, and lateral portions of under side of body (broadly) uniform glossy scarlet or scarlet-vermilion; maxilla black; mandible pale bluish gray, with terminal third (approximately) black; legs and feet dusky (in dried skins); length (skins), 157.5–160

<sup>1</sup> The measurements converted from inches and tenths.

(158.8); wing, 78.7-81.3 (80); tail, 72.4-74.2 (73.2); exposed culmen, 14-14.5 (14.2); depth of bill at base, 4.8-5.1; tarsus, 21.6-22.4 (21.8); middle toe, 14.7-15.2 (15).<sup>1</sup>

*Adult female*.—Head, neck, and upper chest uniform sepia brown; interscapulars, scapulars, and smaller wing-coverts dusky, broadly margined with lighter sepia brown, the back tinged with tawny olive; greater wing-coverts, remiges, and rectrices dusky, edged with light sepia brown; lower back, rump, and upper tail-coverts orpiment orange; under parts of body light buffy orange, slightly paler on abdomen, deeper (inclining to orpiment orange) on under tail-coverts; bill bluish gray basally, dusky terminally; legs and feet dusky horn color (in dried skins); length (skins), 152.4; wing, 79.8; tail, 72.4; exposed culmen, 14.5; greatest width of mandibular rami, 3.8; tarsus, 21.6; middle toe, 15.<sup>2</sup>

Northern Colombia (Cartagena) to Isthmus of Panama (Lion Hill station, Panama Railroad).

I have not been able to examine a specimen from the type locality of this species (Cartagena), but the original description applies fairly well to the Panama bird. The birds from eastern Peru, usually referred to this species, however, are very distinct, and should probably bear the name *Ramphocelus melanogaster* Swainson.<sup>3</sup>

*Ramphocelus luciani* LAFRESNAYE, Rev. Zool., i, Apr., 1838, 54 (Cartagena, Colombia; coll. Lafresnaye).—BONAPARTE, Consp. Av., i, 1850, 242.—SCLATER, Proc. Zool. Soc. Lond., 1856, 130 (monogr.; Cartagena); Synop. Av. Tanagr., 1856, 54.—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 331 (Lion Hill, Panama R. R.).  
*Tanagra* (*Ramphocelus*) *luciani* LAFRESNAYE, Mag. de Zool., sér. 2, 1839, Ois., p. 1, pl. 2.

*Ramphocelus luciani* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 284, part (Lion Hill; Colombia).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 173,



culmen, 12.7–15.2 (13.7); greatest width of mandibular rami, 4.8–5.3 (5.1); tarsus, 19.8–22.4 (20.6); middle toe, 13.5–15.2 (14).<sup>1</sup>

*Adult female*.—Head and neck uniform dark seal brown, darker (almost brownish black) on pileum and hindneck, the forehead and lores slightly tinged with dusky reddish; interscapulars and scapulars dusky centrally, broadly margined with dark brownish red or reddish brown; lower back, rump, and upper tail-coverts brownish red (dull vermilion, coral red, or dull poppy red); wings and tail blackish brown, the wing-coverts with distinct brown or reddish brown edgings, the remiges and rectrices with narrower and less distinct edgings of the same, sometimes obsolete or altogether wanting; under parts of body and under tail-coverts dull brownish red; bill blackish, with mandibular rami grayish or brownish; legs and feet dusky (in dried skins); length, (skins), 145.3–163.6 (154.9); wing, 74.4–78.2 (76.2); tail, 66.3–74.7 (70.1); exposed culmen, 13.2–14.7 (14); greatest width of mandibular rami, 4.6–5.1 (4.8); tarsus, 20.3–21.8 (21.1); middle toe, 13–14.7 (14).<sup>2</sup>

*Young*.—Similar in color to adult female, but texture of plumage very different (loose and “woolly”).

Colombia (Bogota; Santa Marta; Cartagena; etc.<sup>3</sup>), northward along Caribbean coast to Chiriqui.

*Ramphocelus dimidiatus* LAFRESNAYE, Mag. de Zool., sér. 7, 1837, classe ii, not. lxxxi, pl. 81 (Cartagena, Colombia).—BONAPARTE, Consp. Av., i, 1850, 242.—SCLATER, Proc. Zool. Soc. Lond., 1855, 156 (Bogota, Colombia); 1856, 129 (monogr.; Cartagena, Santa Marta, and Bogota, Colombia; Chiriqui?; Veragua?; “Nicaragua”), 149 (Venezuela); 1858, 73 (Rio Napo, e. Ecuador); Synop. Av. Tanagr., 1856, 53; Cat. Am. Birds, 1862, 79 (Colombia).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 141 (Turbo, n. Colombia.—(?) LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 176 (David, Chiriqui).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 627 (Venezuela); 1870, 780 (do.).—(?) SALVIN, Proc. Zool. Soc. Lond., 1870, 187, part (Mina de Chorchá, Chiriqui).—WYATT, Ibis, 1871, 326 (Colombia; descr. nest and eggs).—ROBINSON, Flying Trip to Tropics, 1895, 161 (Magdalena R. and Guaduas, Colombia).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 141 (Santa Marta, Colombia), 159 (Puebla Viejo, prov. Santa Marta), 179 (Palomina and San Miguel, prov. Santa Marta).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 168 (Cacagualito, prov. Santa Marta).

<sup>1</sup>Ten specimens.  
<sup>2</sup>Seven specimens.  
<sup>3</sup>Specimens from central Colombia (“Bogota”) average larger than those from the northern coast district, average measurements being as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Greatest width of man- dibular rami.	Tarsus.	Middle toe.
Three adult males from Bogota .....	79.8	70.4	14.7	5.1	21.1	14.7
Seven adult males from Santa Marta and lower Magdalena River.....	76.5	68.6	13.2	5.1	20.3	13.0

*Ramphocelus dimidiatus* (?) SALVIN, Proc. Zool. Soc. Lond., 1867, 138, part (David, Chiriqui).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 501 (Antioquia, Colombia).

[*Ramphocelus*] *dimidiatus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21, part. *Ramphocelus dimidiatus* SALVIN and GODMAN, Ibis, 1880, 120 (Santa Marta, Colombia); Biol. Centr.-Am., Aves, i, 1883, 263, part.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 172 (San Antonio and Remedios, prov. Antioquia, etc., Colombia; Zulia, Venezuela, etc.).—SALVIN, Cat. Strickland Coll., 1882, 191 (Bogota).—BERLEPSCH, Jour. für Orn., 1884, 291 (Bucaramanga, Colombia).

*R[amphocelus] dimidiatus* CABANIS, Mus. Hein., i, 1850, 25 (Colombia).

*Ramphocelus dimidiatus* STONE, Proc. Ac. Nat. Sci. Phila., 1899, 307 (Ambalema and Ibaguë, centr. Colombia).

*R[amphopsis] dimidiatus* GRAY, Gen. Birds, ii, 1844, 363.

*Ramphocelus dimidiatus dimidiatus* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 150, in text.

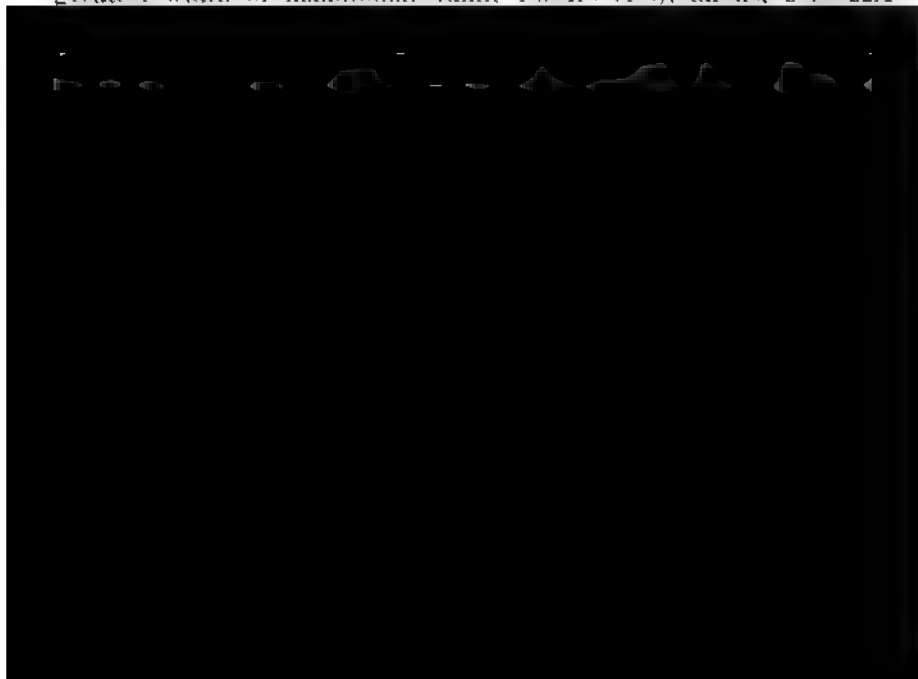
#### RAMPHOCELUS DIMIDIATUS ISTHMICUS Ridgway.

##### PANAMA CRIMSON-BACKED TAWAGER.

Similar to *R. d. dimidiatus*, but tail longer; adult male with colors less bright, the red not so pure, the black abdominal patch more brown; adult female with head and neck decidedly lighter brown and coloration in general decidedly lighter and duller.

*Adult male*.—Length (skins), 156.2–160 (158); wing, 78.7–79.2 (78.7); tail, 72.4–75.9 (73.9); exposed culmen, 13.5–14 (13.7); greatest width of mandibular rami, 4.8–5.3 (5.1); tarsus, 20.3–22.1 (21.1); middle toe, 14–15.2 (14.5).<sup>1</sup>

*Adult female*.—Length (skins), 152.4–170.7 (163.1); wing, 73.7–78.7 (75.9); tail, 68.3–78.7 (72.1); exposed culmen, 13.2–15.2 (14.2); greatest width of mandibular rami, 4.3–4.6 (4.3); tarsus, 20.8–22.1



**RAMPHOCELUS DIMIDIATUS LIMATUS (Bangs).****SAN MIGUEL TANAGER.**

Similar to *R. d. isthmicus*, but smaller; adult male with head, neck, and back lighter crimson-maroon, lesser and middle wing-coverts broadly tipped with crimson-maroon, greater coverts and tertials edged with a duller shade of the same, dusky of abdomen more restricted, sometimes obsolete; adult female similar in coloration to *R. d. isthmicus*, but averaging rather paler and decidedly smaller, especially the tail.

*Adult male*.—Length (skins), 148.6–152.4 (151.1); wing, 75.7–78.7 (77); tail, 64–69.3 (67.1); exposed culmen, 13.2–14.7 (13.7); greatest width of mandibular rami, 4.6–5.1 (4.8); tarsus, 19.1–20.8 (20.1); middle toe, 13–14 (13.2).<sup>1</sup>

*Adult female*.—Length (skins), 146.1–147.3 (146.6); wing, 73.2–75.7 (74.4); tail, 64.8–68.6 (66.5); exposed culmen, 14–14.7 (14.2); greatest width of mandibular rami, 4.1–4.6 (4.3); tarsus, 19.8–20.6 (20.1); middle toe, 12.4–13.2 (12.7).<sup>2</sup>

Island of San Miguel, Bay of Panama.

*Ramphocelus limatus* BANGS, Auk, xviii, Jan., 1901, 31 (San Miguel I., Bay of Panama; coll. E. A. and O. Bangs).

**RAMPHOCELUS UROPYGIALIS Bonaparte.****MAROON-HEADED TANAGER.**

*Adult male*.—"Above brownish black; lower part of rump and upper tail-coverts bright crimson; head and neck all round dark crimson; abdomen bright crimson, with a central patch on the belly and slight flammulations on the sides black; thighs black; bill black; lower mandible except the tip bluish white; feet brown; whole length, 172.7; wing, 83.8; tail, 78.7."<sup>3</sup>

"*Habitat*.—Guatemala.

"This species is most like *R. luciani*, but at once recognizable by the blood-red uropygium and upper tail-coverts, the rest of the back being dark brownish black. The type specimen is at present unique." (Sclater.)

(?) *Ramphocelus affinis* LESSON, Rev. Zool., iii, 1840, 1 (Mexico).

(?) *R[amphocelus] affinis* LESSON, Rev. Zool., iii, 1840, 133 (Colombia; fuller description).

*Ramphocelus uropygialis* BONAPARTE, Rev. et Mag. de Zool., iii, Apr., 1851, 178 (Guatemala; coll. P. L. Sclater); Note sur les Tang., 1851, 29.—SCLATER,

<sup>1</sup> Seven specimens.

<sup>2</sup> Two specimens.

<sup>3</sup> Measurements converted from inches and tenths.

Proc. Zool. Soc. Lond., 1856, 130 (monogr.); Synop. Av. Tanagr., 1856, 54; Cat. Am. Birds, 1862, 79 (Guatemala).—SALVIN, Ibis, 1886, 193.

[*Ramphocelus*] *uropygialis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.

*Ramphocelus uropygialis* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 284, pl. 18, fig. 2.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 173 (Guatemala).

Genus PHLOGOTHAUPIS Sclater and Salvin.

*Phlogothraupis*<sup>1</sup> SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21, 155. (Type, *Tanager* (*Tachyphonus*) *sanguinolentus* Lesson.)

Similar to *Ramphocelus*, but bill different and sexes alike in color. Culmen broad, rounded, not ridged; maxilla deeper than mandible, its tip slightly uncinatate but not notched; mandibular rami much shorter than gonys, truncate posteriorly. Wing rather long (about four and one-third times as long as tarsus), but rounded, as in *Ramphocelus*. Tail about six-sevenths as long as wing, rounded, the rectrices rather broader and more pointed at tips than in *Ramphocelus*.

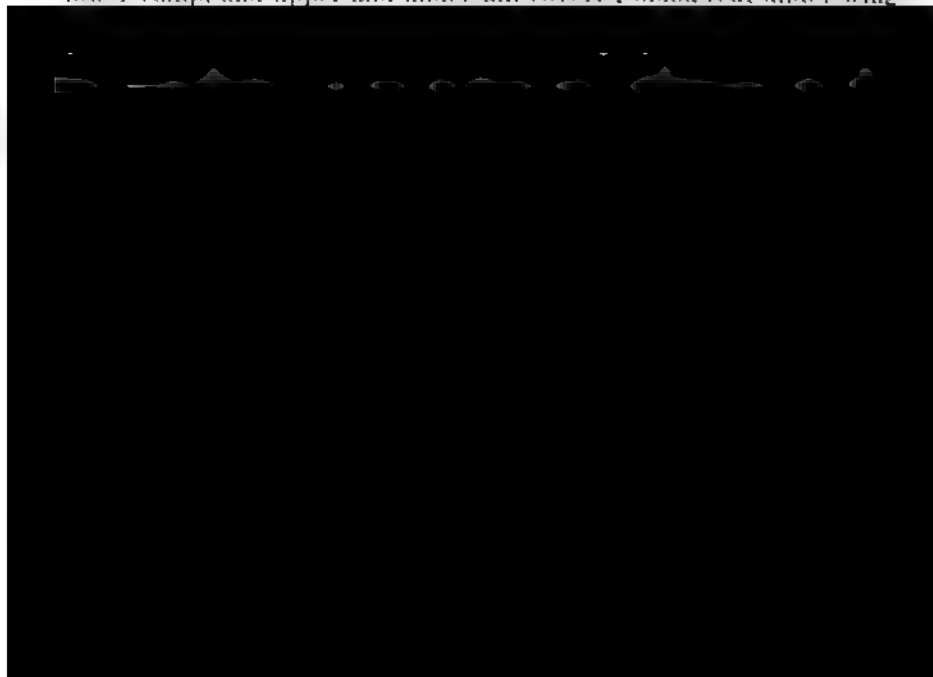
*Coloration*.—Black, with broad ring around neck (widening on chest) and extending over top of head to center of forehead), and tail-coverts blood-red; bill pale blue or bluish white.

*Range*.—Southern Mexico to Costa Rica. (Monotypic.)

PHLOGOTHAUPIS SANGUINOLENTA (Lesson).

GRIMSON-COLLARED TANAGER.

*Adults (sexes alike)*.—General color deep black, with a faint bluish gloss, most apparent on back, scapulars, and margins of wing-coverts; occiput, greater part of crown, hindneck, sides of neck, entire chest, lower rump, and upper and under tail-coverts, blood red; under wing-



bill at base, 8.1–9.7 (9.1); tarsus, 20.8–22.1 (21.6); middle toe, 15.2–16.5 (16).<sup>1</sup>

Southeastern Mexico, in States of Vera Cruz (Jalapa, Cordova, Valle Real, Motzorongo, etc.), Oaxaca (Playa Vicente), and Tabasco (Teapa) southward through Central America to Costa Rica (Cartago, Navarro de Cartago, Angostura, Orosi, San Carlos, Sarapiquí, etc.).

*Tanagra* (*Tachyphonus*) *sanguinolentus* LESSON, Cent. Zool., 1830, 107, pl. 39 (Mexico).

[*Tachyphonus*] *sanguinolentus* GRAY, Gen. Birds, ii, 1844, 365.

[*Ramphocelus*] *sanguinolentus* BONAPARTE, Consp. Av., i, 1850, 242.

[*Ramphocelus*] *sanguinolentus* CABANIS, Mus. Hein., i, 1850, 26 (Mexico).

*Ramphocelus sanguinolentus* SCLATER, Proc. Zool. Soc. Lond., 1856, 132 (monogr.; Valle Real and Cordova, Vera Cruz; Coban, Guatemala; Camalacan R., near Truxillo, Honduras), 303 (Cordova); 1859, 59 (Honduras and Guatemala), 364 (Jalapa, Vera Cruz), 377 (Playa Vicente, Oaxaca); Synop. Av. Tanagr., 1856, 56; Cat. Am. Birds, 1862, 80 (Honduras; Vera Cruz).—SCLATER and SALVIN, Ibis, 1859, 16 (coast Honduras); Proc. Zool. Soc. Lond., 1867, 278 (Mosquito coast, Nicaragua); 1870, 836 (San Pedro, Honduras).—MOORE, Proc. Zool. Soc. Lond., 1859, 59 (Peten, Guatemala).—LAWRENCE, Ann. Lyc., N. Y., ix, 1868, 99 (Navarro and Angostura, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 299 (Orosi, San Carlos, and Sarapiquí, Costa Rica).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 549 (hot region Vera Cruz, up to 4,000 ft).—SALVIN, Ibis, 1872, 316 (Chontales, Nicaragua).

[*Phlogothraupis*] *sanguinolenta* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 21.

*Phlogothraupis sanguinolenta* BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (Orosi, Costa Rica); Liste Ois. Guat., 1877, 33.—SALVIN and GODMAN, Biol. Centr.-Am., Aves., i, 1883, 285 (Belize and Belize R., British Honduras; near Coban, Choctum, Cahabon, and Yzabal, Guatemala; etc.).—NUTTING, Proc. U. S. Nat. Mus., vi, 1883, 400 (Los Sábalos, Nicaragua; food).—SCLATER, Cat. Birds Brit.

<sup>1</sup>Seven specimens.

Average measurements of specimens from different localities are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Four adult males from eastern Mexico (State of Vera Cruz) .....	90.2	81.3	15.2	9.4	21.8	15.2
Four adult males from Guatemala .....	88.4	78.5	15.5	9.7	21.8	16.5
One adult male from southern Honduras (Segovia R.) .....	86.4	.....	17	9.4	20.8	15.7
Two adult males from Costa Rica .....	87.1	75.4	15.5	8.6	22.4	16.8
<b>FEMALES.</b>						
Two adult females from eastern Mexico (State of Vera Cruz) .....	88.1	78.2	15.7	9.4	21.6	15.5
Three adult females from Guatemala .....	87.6	80	15.2	9.4	21.8	16.5
One adult female from northern Honduras .....	88.4	84.3	15.7	9.1	21.3	15.5
One adult female from Costa Rica .....	83.1	72.4	15	8.1	20.8	.....

I am not able to discover any color differences between extreme northern and extreme southern specimens; the series of the latter is very small, however.

Mus., xi, 1886, 178.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 109 (Cartago and Navarro de Cartago, Costa Rica).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 585 (Segovia R., Honduras).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 489 (Rio Escondido, Nicaragua, and Rio Frio, Costa Rica; habits; descr. nest and eggs).

Genus LANIO Vieillot.

*Lanio* VIEILLOT, Analyse, 1816, 40. (Type, *Tanagra atricapilla* Gmelin.)

*Pogonothraupis*<sup>1</sup> CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 600. (Substitute for *Lanio* Vieillot.)

Medium sized to rather large Tanagers, with the maxilla compressed and abruptly hooked at tip, the tomium with a conspicuous median tooth; adult males with the plumage mainly black and yellow.

Bill nearly as long as the head, much compressed and strongly hooked terminally, the maxillary tomium with a conspicuous tooth-like projection about, or a little less than, one-third the distance toward base; mandibular tomium obliquely beveled at tip, then faintly concave to beneath the maxillary tooth, then slightly arched for about the basal two-thirds; culmen nearly as long as tarsus, nearly or quite straight for most of its length; gonys decidedly shorter than length of maxilla from nostril. Nostril partly concealed by distinct antrorse frontal bristles, rather large, nearly circular. Rictal bristles conspicuous; mental bristles distinct, strongly recurved. Wing about five and one-third to five and three-fourths times as long as the short tarsus, rounded (eighth to fifth primaries longest, ninth not longer than fourth); primaries exceeding secondaries by about length of tarsus or a little more. Tail shorter than wing by not more (usually much less) than length of tarsus, slightly rounded, the rectrices rather broad, with

- c. Lower back and rump yellow. (Central Nicaragua to central Costa Rica.)  
*Lanio leucothorax*, adult male (p. 124)
- cc. Lower back and rump black. (Veragua, Chiriqui, and southwestern Costa Rica.) ..... *Lanio melanopygius*, adult male (p. 125)
- aa. Back, wings, and tail brown; head brown or grayish, much paler on throat; under parts of body dingy yellow.
- b. Throat light gray; flanks yellow, tinged with olive-brown; under tail-coverts yellow or dull orange; rump yellowish. *Lanio aurantius*, adult female (p. 123)
- bb. Throat light brown or grayish brown; flanks and under tail-coverts tawny or yellowish cinnamon; rump not yellowish.
- c. More russet-brown above, the head umber brown, and throat wood brown, or isabella color ..... *Lanio leucothorax*, adult female (p. 124)
- cc. More olive-brown above, the head olive, and throat grayish brown or brownish gray ..... *Lanio melanopygius*, adult female (p. 125)

### LANIO AURANTIUS Lafresnaye.

#### MEXICAN SHRIKE-TANAGER.

*Adult male*.—Head, neck (except lower foreneck), scapulars, wings (except part of lesser and middle coverts), tail, and thighs uniform black; inner portion of lesser wing-covert area and innermost middle coverts (except tips) white; back, rump, and under parts of body yellow (grading from cadmium yellow on back to canary yellow on posterior under parts); lower foreneck tawny, the chest more or less tinged with the same; under wing-coverts white, with broad black external border; upper tail-coverts black, the shorter ones yellow with black central areas; bill black; legs and feet dusky; length (skins), 179.1–205.7 (190.8); wing, 104.4–106.7 (105.4); tail, 89.2–96.5 (93); exposed culmen, 18–20.6 (19.6); depth of bill at base, 8.6–10.2 (9.1); tarsus, 19.3–20.6 (20.1) middle toe, 14–16 (15.2).<sup>1</sup>

*Adult female*.—Pileum and hindneck dark olive, usually more or less tinged with slate-gray, especially on forehead; back and scapulars olive-brown, the lower back lighter and more tawny, or ochraceous-olive, this passing into olive-ochraceous or dull gallstone-yellow on rump; wings and tail plain brown (intermediate between raw umber and mars brown); sides of head similar to pileum but not quite so dark and rather grayer, passing into smoke gray on chin, throat, and foreneck; under parts of body lemon yellow, shaded with olive on chest, sides, and flanks; the latter slightly more fulvous; under tail-coverts fulvous-yellow or ochraceous-orange; maxilla blackish, mandible paler, more horn color; legs and feet horn brownish (in dried skins); length (skins), 175.3–196.9 (183.9); wing, 94–99.6 (97); tail, 79.8–91.2 (85.6); exposed culmen, 17.5–19.3 (18.5); depth of bill at base, 8.9–9.7 (9.1); tarsus, 18.8–19.8 (19.3); middle toe, 13.5–14.2 (14).<sup>2</sup>

Southeastern Mexico, in States of Vera Cruz (Orizaba, Santeocomapan, etc.), Oaxaca (Guichicovi), and Tabasco (Teapa), Guatemala (Coban, Chisec, Choctum, Kampamak, Kamkhal, etc.), British Honduras (Belize), and Honduras.

<sup>1</sup> Seven specimens.

<sup>2</sup> Five specimens.

*Lanius aurantius* LAFRESNAYE, Rev. Zool., iv, 1846, 204 ("Colombia," coll. Lafresnaye<sup>1</sup>). — DU BOIS, Esquis. Orn., 1845(?), pl. 21. — BONAPARTE, Conspect. Av., I, 1850, 240. — SLATER, Proc. Zool. Soc. Lond., 1856, 119, 303 (Orizaba, Vera Cruz; Honduras); 1857, 229 (Santecomapan, Vera Cruz). Synop. Av. Tanagr., 1856, 43; Cat. Am. Birds, 1862, 83 (Guatemala, Vera Cruz); Cat. Birds Brit. Mus., xi, 1866, 202 (Santecomapan, Brit. Honduras, Coban, Choctum, Chisee, and Kamkhal, Guatemala; Honduras) = SLATER and SALVIN, Ibis, 1859, 15 (Honduras), Exotic Orn., pt. iv, 1867, 61, pl. 31. — SCUMCHRAST, Mem. Bost. Soc. N. H., i, 1869, 549 (tierra caliente, Vera Cruz). — LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 19 (Guichicovi, Oaxaca). — BOURCART, Liste Ois. Guat., 1878, 33. — SALVIN and GODMAN, Biol. Central-Am., Aves, i, 1873, 304 (Belize, British Honduras, Kampanak, Guatemala, etc.).

[*Lanius*] *aurantius* GRAY, Gen. Birds, iii, App., 1849, 16.

[*Lanius*] *aurantius* SLATER and SALVIN, Nomi. Av. Neotr., 1873, 22.

#### LANIO LEUCOTHORAX Salvin.

##### WHITE-THROATED SHRIKE-TANAGER.

*Adult male*. — Head and neck (except throat and foreneck), scapulars, wings (except innermost lesser and middle coverts), tail, and thighs black; throat and foreneck white, the first margined laterally with black, the last tinged with buff or decidedly of this color; innermost lesser and middle wing-coverts white, the former with basal half (concealed) abruptly blackish, the latter with terminal or subterminal roundish or transverse spots of black; back bright chrome yellow, fading to lemon yellow on rump, the feathers of both grayish basally with a blackish bar between the gray and yellow, this subterminal blackish broadest on rump; upper tail-coverts black, the shorter ones with yellowish or fulvous tips; under parts of body lemon yellow; under tail coverts paler yellow, with concealed portion largely (sometimes mostly) blackish; bill black; iris brown;<sup>2</sup> legs and feet dusky (in dried skins); length (skins), 182.9–195.6 (190); wing, 99.1–102.9 (100.6); tail, 86.4–89.4 (87.4); exposed culmen, 17.8–19.3 (18.5); depth of bill at base, 8.4–9.7 (9.1); tarsus, 18–19.6 (19.1); middle toe, 12.7–14.2 (13.5).<sup>3</sup>

*Adult female*. — Pileum uniform sepia brown; sides of head similar but slightly paler; back, scapulars, wings, and tail plain rich brown (intermediate between tawny-olive and mummy brown), the color fading gradually on rump into light tawny-olive or olive-tawny; chin, throat, and foreneck light wood brown; under parts of body yellow, pure on median portion of breast and abdomen, duller (more wax yellow) on chest and sides, passing into cinnamon-tawny on flanks; under tail-coverts lighter cinnamon-tawny, margined with yellow; maxilla blackish; mandible dusky terminally, horn color basally, legs and feet horn brownish (in dried skins); length (skin), 191.8; wing,

<sup>1</sup> Types now in the collection of the Boston Society of Natural History.

<sup>2</sup> Carmiol, manuscript.

<sup>3</sup> Three specimens.



96.5; tail, 84.6; exposed culmen, 18.5; depth of bill at base, 9.1; tarsus, 17.5; middle toe, 14.

Eastern Nicaragua (Chontales) to central Costa Rica (Angostura; Tucurrique; Pacuare).

*Lanio leucothorax* SALVIN, Proc. Zool. Soc. Lond., 1864, 581 (Tucurrique, Costa Rica; coll. Salvin and Godman); Ibis, 1872, 317 (Chontales, Nicaragua).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 171 (Angostura, Costa Rica).—SCLATER and SALVIN, Exotic Orn., pt. iv, 1867, 63, part, pl. 32 (fig. of female).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 100 (Tucurrique, Angostura, and Pacuare, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 299 (Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 305.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 203.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).

[*Lanio*] *leucothorax* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.

### LANIO MELANOPYGIUS Salvin and Godman.

#### BLACK-RUMPED SHRIKE-TANAGER.

Similar to *L. leucothorax*, but adult male with rump and tail-coverts black, and throat duller white or buffy; adult female with throat and chest grayer and rump darker.

*Adult male*.—Head and neck (except throat and foreneck), scapulars, wings (except innermost lesser and middle coverts), lower back, rump, upper and under tail-coverts, thighs, and tail black; innermost lesser and middle wing-coverts white, the latter with black tips; interscapular region rich lemon or chrome yellow; throat soiled white or dull buffy white, the lateral anterior portion and the chin black; whitish of throat passing into a more decided (sometimes strongly) buffy hue on chest; under parts of body lemon yellow; under tail-coverts black, more or less margined (the shorter ones at least) with canary yellow; bill black; iris dark brown;<sup>1</sup> tarsi horn brownish (in dried skins), toes darker; length (skins), 178–190 (181); wing, 96.5–102 (99.8); tail, 83–93 (89.3); exposed culmen, 18.5–20 (19.1); depth of bill at base, 9–10 (9.2); tarsus, 18–20 (19.1); middle toe, 13.5–15 (14).<sup>2</sup>

*Adult female*.—Pileum olive, passing into olive-brown or deep raw umber on back, this into tawny-olive on rump, the wings and tail colored much like the back; sides of head similar in color to pileum, but slightly grayer, passing into light hair brown on chin, throat, and chest; breast and sides light yellowish olive or olive-yellow, passing into a more tawny-olive hue on flanks; median portion of breast and abdomen lemon yellow; under tail-coverts cinnamon; bill blackish, the maxilla becoming horn color basally; legs and feet dusky (in dried skin); length (skin), 170–182 (177); wing, 86–94.5 (91.5); tail, 77.5–88 (83); exposed culmen, 18–19 (18.3); depth of bill at base, 8.5–9 (8.6); tarsus, 17.5–18 (17.9); middle toe, 12.5–15 (13.9).<sup>3</sup>

<sup>1</sup> Heyde, manuscript.

<sup>2</sup> Seven specimens.

<sup>3</sup> Five specimens.

Southwestern Costa Rica (Pirris, Pozo Azul de Pital, etc.), south to Veragua (Cordillera de Tolé, Santiago, Cordillera del Chuca, Chitra, Calovevora, Santa Fé) and Chiriqui (Bugaba, Volcan de Chiriqui, Divala, etc.)

*Lanio leucothorax* (not of Salvin, 1864) SALVIN, Proc. Zool. Soc. Lond., 1867, 139 (Cordillera de Tolé, Santiago, Calovevora, and Santa Fé, Veragua; crit.); 1870, 188 (Volcan de Chiriqui and Bugaba, Chiriqui; Cordillera del Chuca, and Chitra, Veragua).—SCLATER and SALVIN, Exotic Orn., pt. iv, 1867, 63, part, pl. 32 (fig. of male).

*Lanio melanopygius* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, sig. 39, Dec. 1883, 305 (ex "*Lanio leucothorax melanopygius*, Ridgw. Pr. U. S. Nat. Mus. 1883;" Bugaba, Chiriqui; coll. Salvin and Godman).—RIDGWAY, Proc. U. S. Nat. Mus., vi, no. 26, Apr. 11, 1884, 412 (Pirris, Costa Rica; crit.)—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 203.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Pozo Azul de Pirris, s. w. Costa Rica).—CHERRIE, Anal. Inst. Fis.-Geog. Costa Rica, vi, 1893, 13 (Pozo Azul de Pital, s. w. Costa Rica; descr. young).

#### Genus PHÆNICOPHILUS Strickland.

*Phenicophilus* STRICKLAND, Jardine's Contr. Orn., 1851, 104. (Type, *Turdus palmarum* Linnæus.)

Medium sized, plainly colored Tanagers with the bill rather small and slender (exposed culmen, however, at least two-thirds as long as tarsus), tail even, shorter than length of wing to tips of secondaries, and outermost (ninth) primary longer than third; adults olive-green above, gray or gray and white beneath, the head chiefly black.

Bill nearly as long as head, slender-conoid, its depth at base much less than half the length of exposed culmen, and about equal to or slightly greater than its basal width; exposed culmen about four-fifths

*Coloration.*—Above plain olive-green; top and sides of head black, in gray with white supraloral, supraauricular, and suborbital marks; beneath bluish gray and white. Sexes alike.

*Range.*—Island of Haiti, Greater Antilles. (Two species.)

KEY TO THE SPECIES OF PHENICOPTERUS.

- a Crown and occiput black, whole throat and median portion of chest, breast, and abdomen white. (Haiti.) ..... *Phenicophilus palmarum*, adults, (p. 127)  
 aa Crown and occiput gray, like hindneck; median portion of throat gray, whole of chest, breast, and abdomen, as well as sides and flanks, gray. (Haiti.) ..... *Phenicophilus poliocephalus*, adults, (p. 128)

PHÆNICOPHILUS PALMARUM (Linnæus).

### PALM Tanager

*Adult (nearctic).* Pileum and sides of head black, sharply defined below and posteriorly, relieved by a large white spot on each side of forehead, a white spot on lower eyelid, and a broad white supraauricular streak (beginning near of middle upper eyelid); malar region, chin, whole throat, and median portion of chest, breast, and abdomen white; hindneck and sides of neck slate-gray, passing into lighter gray (no. 7 or ochraceous) on sides of breast, sides, and flanks; rest of upper parts plain yellowish olive green; edge of wing light yellow; maxilla black; mandible grayish or horn color (in dried skins), becoming black at tip; iris dark brown; legs and feet horn color or dusky (in dried skins).

*Adult male.* Length (skins), 157.5-160 (158.8); wing, 82.8-87.6 (85.1); tail, 66.5-71.3 (68.8); exposed culmen, 17.3-18.3 (17.8); depth of bill at base (one specimen), 7.6; tarsus, 23.1-24.6 (23.9); middle toe, 15-16 (15.5).<sup>1</sup>

*Adult female.* Length (skin), 166.4; wing, 83.1; tail, 71.1; exposed culmen, 16; depth of bill at base, 6.4; tarsus, 23.4; middle toe, 16.<sup>9</sup>

*Young* -- Similar to the adults, except that the black of the head is replaced by dusky grayish or slate color, and the entire head, neck, and breast are washed with olive yellowish." (Cherrie.)

Island of Haiti, Greater Antilles.

- (*Parus*) *palmarum* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 205 (based on *Le Pal-  
mode* BRISSON, Orn., ii, 301, and *Le Palmode à tireur* BRISSON, Orn., ii, 303).  
GÜLKES, Syst. Nat., i, pt. ii, 1788, 324. LATHAM, Index Orn., i, 1790, 356.  
*Tachycineta palmarum* VIEILLIOT, Nouv. Dict. d'Hist. Nat., xxxii, 1819, 359.  
FAC. Meth., ii, 1823, 803.  
*(Trogon)* *palmarum* GRAY, Gen. Birds, iii, 1849, App., p. 16.  
*Trogon palmarum* BRYANT, Proc. Bos. Soc. N. H., xi, 1806, 92.  
*Phainopepla palmarum* STRICKLAND, Jardine's Contr. Orn., 1851, 104.  
*Phainopepla palmarum* SLATER, Proc. Zool. Soc. Lond., 1856, 84 (monogr.),  
1857, 232; Synop. Av. Tanager, 1856, 22, Cat. Am. Birds, 1862, 92, Cat.  
Birds Brit. Mus., xi, 1866, 244. — SALASIN, Cat. Strickland Coll., 1882, 198 —  
CORY, Bull. Nutt. Orn. Club, vi, 1881, 152. Hueti, hal its, etc. Birds Haiti

<sup>1</sup> Two specimens<sup>2</sup> One specimen.

and San Dom., 1885, 56, pl. (21), fig. 5 (mountains of interior); Auk, iii, 1886, 200 (synonymy and descr.); Birds W. I., 1889, 87; Cat. W. I. Birds, 1892, 16, 114, 131.

*Phœnicophilus palmarum* CHERRIE, Contr. Orn. San Dom., 1896, 14 (habits, notes, etc.).

[*Phœnicophilus*] *palmarum* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 25.—CORY, List Birds W. I., 1885, 12.

*Dulus palmarum* BONAPARTE, Rev. et Mag. de Zool., iii, 1851, 78; Note sur les Tang., 1851, 29.

PHÆNICOPHILUS POLIOCEPHALUS (Bonaparte).

GRAY-CROWNED PALM Tanager.

Similar to *P. palmarum*, but slightly larger; under parts deeper gray, not becoming white medially, the gray extending over greater part of throat; crown and occiput gray, like hindneck.

*Adult male*.—Forehead, lores, suborbital region, and auricular region uniform black, the first with a large spot of white on each side; a small white spot on lower eyelid and another on posterior half of upper eyelid; crown, occiput, hindneck, and entire under parts of body uniform gray, deeper (slate-gray) on the first, paler (no. 7 gray) on the latter; rest of upper parts plain yellowish olive-green; edge of wing light yellow; chin, upper throat, and malar region white, extending laterally to beyond end of auricular region, the space inclosed between these white lateral stripes (including greater part of throat) deeper gray than breast, etc., but slightly paler than hindneck; under tail-coverts light gray, broadly margined with white; maxilla black; mandible dark grayish (in dried skin), blackish terminally; legs and feet dusky horn color (in dried skin); length (skin), 167.6; wing, 61; tail, 70.4; exposed culmen, 17.8; depth of bill at base, 7.1; tarsus, 23.1;

## Genus TACHYPHONUS Vieillot.

*Tachyphonus* VIEILLOT, Analyse, 1816, 33. (Type, *Tangara noir* male, Buffon, = *Tanagra rufa* Boddaert.)

*Pyrrota* VIEILLOT, Analyse, 1816, 45. (Type, *Tangaroux* Buffon, = *Tanagra rufa* Boddaert.)

*Comarophagus* BOIE, Isis, 1826, 974. (Type, *Oriolus leucopterus* Gmelin, = *Tanagra rufa* Boddaert.)

Medium sized or small Tanagers with rather slender bill (but exposed culmen at least two-thirds as long as tarsus), tail rounded and equal to or longer than length of wing to tips of secondaries, and with the outermost (ninth) primary longer than third; adult males mostly uniform black, usually relieved by white under wing-coverts, and sometimes by a yellow, tawny, or red crown-patch or crest; females plain rufous, brown, or olive, paler (sometimes yellow) below.

Bill subconical, compressed terminally, shorter than head; exposed culmen not longer than middle toe with claw (usually shorter), straight basally (sometimes for basal half or more), strongly convex terminally, the tip slightly (sometimes distinctly) uncinat; gonys decidedly shorter than length of maxilla from nostril, very slightly convex or nearly straight; maxillary tomium nearly straight, but middle portion appreciably convex, distinctly, but not abruptly, deflected basally, and more or less distinctly notched subterminally; mandibular tomium slightly sinuate, or quite straight to the decidedly, sometimes abruptly, deflected basal portion, the tip of the mandible acute; basal depth of bill equal to or slightly exceeding the basal width, and equal to about two-thirds or three-fourths the lateral length of the mandible. Nostril exposed, roundish or horizontally oval, with moderately broad superior membrane. Rictal bristles moderately long, but very slender and inconspicuous. Wing rather long (about three and one-fourth to three and five-sixths times as long as tarsus), rounded (seventh to fifth primaries longest, ninth shorter than fifth, sometimes shorter than third); primaries exceeding secondaries usually by less than length of exposed culmen (by more in *T. surinamensis*). Tail shorter than wing by much less than length of tarsus, rounded or nearly even, the rectrices moderately broad, with compact webs and rounded tips. Tarsus decidedly longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw decidedly shorter than its digit.

*Coloration*.—Adult males deep black, usually with white on lesser wing-coverts or under wing-coverts, sometimes with a buff, tawny, orange, or red crown-patch (occasionally developed into a crest), the rump sometimes buffy; females and young very different—plain brownish, olive, or rusty above, paler below.

*Range*.—Southern Honduras to southeastern Brazil, Bolivia, and Peru.

## KEY TO THE SPECIES OF TACHYPHONUS.

- a. General color black. (Adult males.)
- b. With white on lesser and under wing-coverts.
- c. Larger (wing more than 82.5); middle wing-coverts and part of lesser covert area black. (Costa Rica to southern Brazil, Trinidad, and Tobago.)  
*Tachyphonus rufus*, adult male (p. 130)
- cc. Smaller (wing less than 69.8); middle wing-coverts and all of lesser covert area white.
- d. Middle wing-coverts greatly developed, covering much more than basal half of greater coverts; crown without trace of central concealed spot of yellow. (Veragua to Bolivia, southwestern Brazil, Venezuela, and Trinidad) ..... *Tachyphonus luteus*, adult male (p. 132)
- dd. Middle wing-coverts normally developed, covering not more than basal half of greater coverts; crown usually with more or less of a central patch of yellow or orange-rufous.
- e. Crown-patch small, concealed, yellow, sometimes wanting. (Costa Rica, to southeastern Honduras.) ... *Tachyphonus axillaris*, adult male (p. 134)
- ee. Crown-patch large, conspicuous, exposed, orange-rufous. (Veragua, Chiriqui, and southwestern Costa Rica.)  
*Tachyphonus nitidissimus*, adult male (p. 136)
- bb. Without white on wing-coverts (or elsewhere). (Costa Rica to Colombia; Ecuador?) ..... *Tachyphonus delatitii*, adult male (p. 136)
- aa. General color rufous, yellowish olive, or brown. (Adult females and young.)
- b. General color rufescent (deep cinnamon-rufous above, tawny-ochraceous below); wing more than 76.2 ... *Tachyphonus rufus*, adult female and young male (p. 131)
- bb. General color not rufescent; wing not more than 69.8.
- c. Above yellowish olive-green, beneath yellow.<sup>1</sup>
- d. Sides of head distinctly gray; chin and throat white.  
*Tachyphonus luteus*, adult female and young male (p. 133)
- dd. Sides of head not distinctly, if at all, gray; chin and throat pale buffy.
- e. Duller yellow below, especially across chest.  
*Tachyphonus nitidissimus*, adult female and young male (p. 136)
- cc. Brighter yellow, tawny

depth of bill at base, 7.6–9.4 (8.1); tarsus, 22.6–25.4 (23.9); middle toe, 14.5–18 (16.8).<sup>1</sup>

*Adult female*.—Above plain rufous-chestnut; beneath plain cinnamon-tawny or tawny-ochraceous; bill and feet as in adult male; length (skins), 157.5–185.4 (173.5); wing, 78–86.1 (82.8); tail, 70.6–82 (77.5); exposed culmen, 16–19.6 (17.5); depth of bill at base, 7.9–9.4 (8.6); tarsus, 22.1–24.9 (24.1); middle toe, 16–17.5 (16.8).<sup>2</sup>

Tropical South America in general, including islands of Trinidad and Tobago; south to southern Brazil, Paraguay, and Argentina, north through Isthmus of Panama to Costa Rica.

*Tanagra albirostris* (not of Linnæus) BODDAERT, Tabl. Pl. Enl., 1783, 11 (based on *Tangara noir, d'Amérique*, Buffon, Pl. Enl., pl. 179, fig. 2; adult male).

*Tanagra rufa* BODDAERT, Tabl. Pl. Enl., 1783, 44 (based on *Le Tangaroux, de Cayenne*, Buffon, Pl. Enl., pl. 711; adult female).

*Tachyphonus rufus* ALLEN, Bull. Am. Mus. Nat. Hist., iii, no. 2, Sept. 29, 1891, 359 (Chapada, prov. Mattogrosso, s. w. Brazil; descr. nest and eggs; crit.; iv, 1892, 52 (El Pilar, Venezuela; crit.).—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 31, (Trinidad; habits).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 160 (Pueblo Viejo, prov. Santa Marta, Colombia), 179 (Palomina, prov. Santa Marta).

*Oriolus melaleucus* SPARRMANN, Mus. Carls., 1787, no. 31 (Guiana).

*Tachyphonus melaleucus* SCLATER, Proc. Zool. Soc. Lond., 1856, 113 (monogr.; Cayenne; Guiana; Venezuela; Trinidad; Tobago; Bogota, Colombia; Pínto-hamba, Peru; Goiaz, Pernambuco, and Rio Grande do Sul, Brazil; Paraguay;

<sup>1</sup> Twenty specimens.

<sup>2</sup> Twelve specimens.

Although the series of specimens examined is, in the aggregate, a large one, the number of specimens from separate geographic areas is in all cases small and not sufficient to show whether the species should be subdivided or not. Average measurements according to locality are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
One adult male from Veragua .....	84.1	78.0	16.5	8.1	24.6	.....
Three adult males from Isthmus of Panama .....	87.6	80.8	16.8	7.9	23.9	17.0
Three adult males from Colombia.....	90.4	82.8	16.3	8.4	24.6	17.3
Two adult males from eastern Peru.....	85.3	80.3	17.5	8.1	24.4	17.0
Two adult males from Trinidad.....	86.6	79.5	17.5	.....	23.9	16.8
Two adult males from Tobago.....	89.4	80.3	17.8	7.9	25.1	15.7
Seven adult males from Brazil (Bahia and Chapada)	86.6	81.3	17.8	8.4	23.4	16.5
FEMALES.						
Two adult females from Isthmus of Panama.....	83.8	79.8	18.0	8.9	24.6	17.0
Two adult females from Colombia.....	79.8	73.4	16.8	9.1	23.4	16.8
One adult female from eastern Peru .....	86.1	81.5	17.0	9.1	24.9	16.3
Two adult females from Trinidad.....	81.3	75.2	18.8	8.6	23.6	16.5
Two adult females from Tobago.....	83.3	74.4	17.5	7.9	24.1	16.8
Three adult females from southwestern Brazil (Chapada).....	83.3	80.0	16.8	8.4	23.9	16.8

- Corrientes, Argentina); Synop. Av. Tanagr., 1856, 37; Cat. Am. Birds 1862, 84 (Cayenne; Trinidad); Cat. Birds Brit. Mus., xi, 1886, 206 (Costa Rica; Veragua; Panama; Medellin, Remedios, and Bogota, Colombia; Caracas, Venezuela; Trinidad; Tobago; Cayenne; Bartica Grove, British Guiana; Pará, lower Amazon; Baião, Rio Tocantins; Pernambuco; Bahia; Rio Claro, prov. Goiaz; Rio Paraná).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 331 (Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 351 (Panama R. R.); 1867, 571 (Pará); 1868, 167 (Venezuela); 1876, 16 (Maranura, Huiro, and Protrero, s. Peru); 1879, 503, pl. 42, fig. 5 (Antioquia, Colombia; egg figured).—TAYLOR, Ibis, 1864, 82 (Trinidad).—FINSCH, Proc. Zool. Soc. Lond., 1870, 582 (Trinidad).—PELZELN, Orn. Bras., 1871, 212.—WYATT, Ibis, 1871, 327 (Colombia).—LAYARD, Ibis, 1873, 379 (Pará).—FORBES, Ibis, 1881, 333 (Parahyba, etc., n. e. Brazil).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1882, 15 (n. e. Peru); Orn. du Pérou, ii, 1885, 504.—ZELLDON, Cat. Aves de Costa Rica, 1882, 7; Anal. Mus. Nac. Costa Rica, i, 1887, 310 (Brazil).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 309.—BERLEPSCH, Journ. für Orn., 1884, 292 (Bucaramanga, Colombia); 1887, 7 (Lambaré, Paraguay; crit.), 115 (Paraguay).—SALVIN, Ibis, 1885, 211 (British Guiana).—RIDGWAY, Proc. U. S. Nat. Mus., vii, 1884, 173 (Trinidad).—KEAR, Ibis, 1892, 124 (lower Pilcomayo, Argentina).—ROBINSON, Flying Trip to Tropics, 1895, 161 (Guaduas, Colombia); Proc. U. S. Nat. Mus., xviii, 1896, 677 (Margarita I., Venezuela).—IHERING, Aves do Est. S. Paulo, 1899, 152.
- Tachyphonus melaleucus* SCLATER and SALVIN, Exotic Orn., 1868, 68.
- [*Tachyphonus*] *melaleucus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23.
- [*Oriolus*] *leucopterus* GMELIN, Syst. Nat., i, 1788, 392, part.
- Tachyphonus leucopterus* VIEILLLOT, Nouv. Dict. d'Hist. Nat., xxxii, 1819, 358; Enc. Méth., ii, 1823, 803; Gal. Ois., 1834, 113, pl. 82.—D'ORBIGNY, Voy. Amér. Mérid., Ois., 1839, 277.
- [*Pyrrota*] *leucoptera* BONAPARTE, Conspect. Av., i, 1850, 238.
- Tachyphonus leucopterus* GRAY, Gen. Birds, ii, 1849, 365.
- Tanagra nigerrima* GMELIN, Syst. Nat., i, 1788, 899 (based on *Tanagra noir*, *de la Nouvelle-Bouffe*, Pl. Élév. de l'Ét. de l'Inde, etc., Hist. Nat. Tanag.



space on sides of mandible, covering rami and projecting in an acute angle more than halfway between gonydeal angle and tip of mandible; iris brown; legs and feet bluish in life, dusky in dried skins; length (skins), 109.2–129.5 (121.9); wing, 60.2–68.1 (64.3); tail, 51.3–58.4 (54.9); exposed culmen, 10.7–12.7 (12.2); depth of bill at base, 5.1–7.1 (5.8); tarsus, 15.5–17.8 (16.8); middle toe, 9.7–10.9 (10.4).<sup>1</sup>

*Adult female*.—Above bright yellowish olive-green, darker and duller on pileum; sides of head (sometimes forehead and hindneck also) gray, paler toward malar region and on lores; eyelids dull white; chin and throat dull buffy white; rest of under parts gamboge or light chrome yellow medially, shading into light yellowish olive-green laterally; under wing-coverts white slightly tinged with yellow; axillars light yellow; bill and feet as in adult male; length (skins), 114.3–121.9 (118.1); wing, 61–61.5 (61.2); tail, 50.8–52.8 (51.8); exposed culmen, 12.7–13.2 (13); depth of bill at base, 5.8–6.9 (6.4); tarsus, 15.7–16.5 (16); middle toe, 9.7–10.2 (9.9).<sup>2</sup>

*Immature male*.—Similar to the adult female, but deeper and purer yellow below; wing, 60.5; tail, 51.8; exposed culmen, 12.7; depth of bill at base, 6.9; tarsus, 17.3; middle toe, 10.2.<sup>3</sup>

Veragua<sup>4</sup> to Trinidad, Guiana, Bolivia, and western Ecuador.

*T[achyphonus] luctuosus* LAFRESNAYE and D'ORBIGNY, Mag. de Zool., 1837 (Synopsis Avium, i, p. 29; Guarayos, Bolivia).—SCLATER and SALVIN, Exotic Orn., 1868, 68.

*Tachyphonus luctuosus* SCLATER, Proc. Zool. Soc. Lond., 1854, 115 (Quixos, e. Ecuador); 1855, 156 (Bogotá, Colombia); 1856, 114 (monogr.; Bolivia; e.

<sup>1</sup> Seventeen specimens, average measurements, according to locality, being as follows:

Locality.	Wing.	Tail.	Culmen.	Depth of bill at base.	Tarsus.	Middle toe.
Two adult males from Veragua .....	67.1	54.4	12.2	6.1	17.3	10.2
Three adult males from Isthmus of Panama .....	63.2	54.1	12.4	6.4	17.0	10.7
Four adult males from central Colombia (Bogota) ..	67.3	56.9	12.2	6.1	17.3	10.4
One adult male from western Ecuador (Guayaquil) ..	63.0	54.6	12.7	5.3	17.0	10.4
One adult male from eastern Ecuador (Rio Napo) ..	60.5	51.3	12.2	5.3	15.5	10.4
One adult male from lower Amazon (Diamantina) ..	60.2	54.1	10.7	5.1	15.7	9.7
One adult male from British Guiana (Demerara) ...	62.0	54.6	11.9	5.1	16.8	9.9
One adult male from Venezuela (Cumanacoa) .....	64.0	55.4	12.7	5.8	17.3	10.2
Two adult males from Trinidad .....	63.0	55.6	11.9	.....	16.8	9.9

The series examined is much too small to show whether there are constant differences, according to geographic area, but the specimens from Trinidad, British Guiana, and lower Amazon have the middle wing-coverts decidedly less developed (covering but little more than basal half of the greater coverts) than those from Veragua, Isthmus of Panama, Colombia, and western Ecuador, and I would not be surprised if a larger series would show that the species should be subdivided, according to the character mentioned, into two forms having separate ranges, as indicated.

<sup>2</sup> Two specimens; one from Panama, the other apparently a "Bogota" skin.  
<sup>3</sup> Specimen (No. 150874, U. S. Nat. Mus.) from Cascajal, province Coclé, Panama.  
<sup>4</sup> Nicaraguan and Costa Rican references to *T. luctuosus* belong to *T. acillaris*.

Peru; Quixos, e. Ecuador; Bogotá and Santa Marta, Colombia; Tobago; Trinidad); 1860, 274 (Babahoyo, w. Ecuador), 292 (Esmeraldas, w. Ecuador); Synop. Av. Tanagr., 1856, 38; Cat. Am. Birds, 1862, 85 (Trinidad; Bolivia; Colombia; Esmeraldas, Ecuador); Cat. Birds Brit. Mus., part, xi, 1886, 208 (Panama and Chepo, Isthmus Panama; Santa Marta, Remedios, and Bogota, Colombia; Santa Rita and Esmeraldas, Ecuador; Bolivia; Engenho do Gama, Brazil; Trinidad; Bartica Grove, British Guiana).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 141 (Rio Truando, n. Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 207 (Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 351 (Panama R. R.); 1868, 167 (Venezuela); 1879, 503 (Antioquia, Colombia), 601 (Bolivia).—FINSCH, Proc. Zool. Soc. Lond., 1870, 582 (Trinidad).—SALVIN, Proc. Zool. Soc. Lond., 1870, 188 (Veragua); Cat. Strickland Coll., 1882, 194 (Bolivia?; Trinidad); Ibis, 1885, 211 (British Guiana).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1877, 332 (w. Ecuador).—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 547 (Chimbo, w. Ecuador).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 310, part (Chepo, Isthmus Panama; South American localities and references).—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 574 (w. Ecuador).—BERLEPSCH, Journ. für Orn., 1884, 292 (Bucaramanga, Colombia); 1889, 297 (Sarayacu and Ucayali, e. Peru; crit.).—ALLEN, Bull. Am. Mus. N. H., ii, 1889, 82 (Reyes, Bolivia).—RIKER and CHAPMAN, Auk, vii, 1890, 267 (Santarem, lower Amazon).—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 31 (Trinidad).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 357, 1899, 18 (Foreste del Rio Peripa, w. Ecuador).

[*Tachyphonus*] *luctuosus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23, part. *Pyrranga luctuosa* D'ORBIGNY, Voy. Amér. Mérid., Ois., 1839, 263, pl. 20, figs. 1 (male), 2 (female).

[*Lanio*] *tenuirostris* BONAPARTE, Consp. Av., i, 1850, 240.

*Tachyphonus albigularis* LÉOTAUD, Ois., Trinidad, 1866, 300.

#### TACHYPHONUS AXILLARIS Lawrence.

##### COSTA RICAN WHITE-SHOULDERED TANAGER.

Similar to *T. nitidissimus*, but adult male with colored crown-patch



olive-green laterally, the throat paler, sometimes whitish; bill as in adult male but more brownish; legs and feet horn brownish in dried skins, light heliotrope purple in life;<sup>1</sup> length (skins), 121.9–132.1 (126.2); wing, 59.2–61.7 (60.5); tail, 54.9–56.4 (55.4); exposed culmen, 10.9–13.5 (12.2); depth of bill at base, 6.1–6.6 (6.4); tarsus, 17–18.5 (17.8); middle toe, 10.2–12.4 (11.2).<sup>2</sup>

*Young male*.—Similar to the adult female, but much browner olive-green above, without any gray on head or neck; middle and greater wing-coverts narrowly tipped with light buffy; under parts much duller yellow (decidedly buffy or deep maize yellow posteriorly), the chin and throat also yellow (wax yellowish). (From type of *Chlorospingus axillaris* Lawrence; No. 64522, U. S. Nat. Mus.; Talamanca, Costa Rica.)

Costa Rica (Angostura; Valza; Talamanca) and Nicaragua (Rio Escondido); southeastern Honduras (Rio Segovia)?.<sup>3</sup>

*Tachyphonus luctuosus* (not of Lafresnaye and D'Orbigny) CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 171 (Angostura, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 100 (Angostura and Juiz, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 299 (Costa Rica).—(?) SALVIN, Ibis, 1872, 313, 317 (Chontales, Nicaragua).—(?) BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (San Carlos, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 310, part (Valza, Juiz, and Angostura, Costa Rica; Chontales, Nicaragua?).—RIDGWAY, Proc. U. S. Nat. Mus., vi, 1884, 412 (Talamanca, Dos Novillos, and Juiz, Costa Rica; crit.).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110, part (Angostura, Costa Rica).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 490 (Rio Escondido, Nicaragua).

(!) [*Tachyphonus*] *luctuosus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23, part (Nicaragua).

*Tachyphonus nitidissimus* (not of Salvin) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 312, part (Valza, "Irazú," and Angostura, Costa Rica).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 214, part (Valza, Costa Rica).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110, part.—CHERRIE, Anal. Inst. Fisico-Geog. Nac. Costa Rica, vi, 1893, 14 (Naranjo, Costa Rica).

*Tachyphonus nitidissimus*? RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 586 (Segovia R., Honduras; crit.).

*Chlorospingus axillaris* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., x, Mar., 1874, 395 ("Volcan de Irazú," i. e., Talamanca,<sup>4</sup> Costa Rica; coll. U. S. Nat. Mus.; young male).—SALVIN, Ibis, 1874, 308 (crit.; refers it to *Tachyphonus nitidissimus*).

<sup>1</sup> Richmond, Proc. U. S. Nat. Mus., xvi, 1893, 490.

<sup>2</sup> Three specimens.

<sup>3</sup> An adult female of a *Tachyphonus* from the Segovia River, Honduras, in the U. S. National Museum collection (No. 112099, Segovia River, June 18, 1887, C. H. Townsend), is very similar in coloration to the adult female of *T. nitidissimus*, but has the throat entirely yellow, like rest of under parts, and the sides of head yellowish olive-green. It may represent individual variation in this species or, possibly, a distinct form. Its measurements are as follows: Length (skin), 132.1; wing, 60.2; tail, 55.1; exposed culmen, 12.2; depth of bill at base, 6.4; tarsus, 18; middle toe, 10.2.

<sup>4</sup> According to José C. Zeledon, collector of the type specimen.

## TACHYPHONUS NITIDISSIMUS Salvin.

## VERAGUAN WHITE-SHOULDERED TANAGER.

Similar to *T. arillaris*, but adult male with colored crown-patch much larger, conspicuously exposed, and orange-rufous instead of yellow; adult female apparently duller yellow below.

*Adult male.* General color uniform deep black; pileum with a median, partly concealed, patch or stripe of orange-ochraceous; lesser and middle wing-coverts white, excepting those bordering the carpal region; axillars and under wing-covert region white, the latter with a broad black exterior border; bill black, with rami whitish (extending more than halfway to tip of mandible, the anterior extremity pointed); tarsi light horn color (in dried skins), toes darker; length (skins), 124.5-134.6 (128.8); wing, 66-68.8 (67.6); tail, 58.4-60.2 (59.2); exposed culmen, 13-14.5 (13.7); depth of bill at base, 6.6-6.9; tarsus, 17.8-19.3 (18.5); middle toe, 10.7.<sup>1</sup>

*Adult female.*—Similar to the adult female of *T. luctuosus*, but without gray on sides of head, etc., and throat more buffy; above plain yellowish olive-green, including pileum and hindneck; sides of head lighter and duller olive-greenish, the feathers of auricular region with dull whitish or pale yellowish shaft-streaks; lores and malar region paler than auricular region and inclining to dull brownish buffy; chin and throat pale buffy yellowish, the feathers whitish beneath surface; chest, sides, and flanks dull yellowish olive or olive-yellowish, passing into yellow on breast and abdomen; under tail-coverts paler and duller yellow; under wing-coverts dull white, slightly tinged with yellow; bill as in adult male but more brownish; legs and feet pale brownish (in dried skin); length (skin), 119.4; wing, 63.5; tail, 59.2; exposed culmen, 14; depth of bill at base, 7.1; tarsus, 18; middle toe, 10.4.<sup>2</sup>

elongated narrow feathers, forming a bushy crest when erected; bill black, the rami and a little beyond dull whitish or pale grayish (in dried skins); legs and feet dusky horn color (in dried skins); length (skins), 142.2–149.9 (145.8); wing, 70.9–75.9 (74.2); tail, 63–65.8 (64.5); exposed culmen, 12.4–13.5 (13); depth of bill at base, 6.6–6.9 (6.6); tarsus, 19.8–20.6 (20.3); middle toe, 11.9–13 (12.4).<sup>1</sup>

*Adult female*.—Head, neck, and chest light bistre brown, darker or deeper on pileum and hindneck; back, scapulars, and lesser wing-coverts plain dark bistre brown or sepia, passing into blackish brown or sooty on rump and upper tail-coverts; wings and tail brownish black or sooty with paler (bistre brown or olive) edgings; under parts shading gradually from light bistre (varying to almost raw umber) anteriorly to sooty brown on under tail-coverts; maxilla blackish, mandible blackish or blackish brown, becoming indistinctly paler basally; legs and feet dusky; length (skins), 134.6–142.2 (138.4); wing, 65–69.6 (66.8); tail, 59.4–60.7 (59.9); exposed culmen, 12.2–13.2 (12.7); depth of bill at base, 5.8–6.4 (6.1); tarsus, 18.3–19.1 (18.5); middle toe, 11.9–12.4 (12.2).<sup>2</sup>

Costa Rica (Talamanca, Pacuare, San Mateo, etc.) and southward to western Ecuador (Pallatanga, Pasto, etc.).

*Tachyphonus delatrii* LAFRESNAYE, Rev. Zool., x, Mar., 1847, 72 (San Buenaventura, Colombia).—SCLATER, Proc. Zool. Soc. Lond., 1856, 116 (monogr.; San Buenaventura and Gorgona, n. w. coast Colombia); (?) 1859, 139 (Pallatanga, w. Ecuador); Synop. Av. Tanagr., 1856, 40; Cat. Am. Birds, 1862, 86 (Bogota; Pallatanga?); Cat. Birds Brit. Mus., xi, 1886, 215 (Santa Fé and Santiago, Veragua; Panama; Gorgona I., Remedios, and Bogota, Colombia; Pallatanga (?) and Pasto, w. Ecuador).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 142 (Rio Truando, Colombia); 1865, 171 (Pacuare, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 331 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 351 (Lion Hill); 1879, 503 (Antioquia, Colombia); Exotic Orn., pt. v, 1868, 67, pl. 34, fig. of male, not fig. of female.—SALVIN, Proc. Zool. Soc. Lond., 1867, 140 (Santa Fé and Santiago, Veragua).—FRANTZIUS, Journ. für Orn., 1869, 299 (Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (San Mateo, Costa Rica; habits).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 312.—ZELEDON, Anal. Mus. Nac., Costa Rica, i, 1887, 110 (Pacuare, Costa Rica).

*Tachyphonus delatrei* LAWRENCE, Ann. Lyc., N. Y., ix, 1868, 100 (Payua, Costa Rica).

[*Tachyphonus*] *delattrii* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23.

[*Tachyphonus*] *delatrii* GRAY, Gen. Birds, iii, 1849, App., 17.—BONAPARTE, Consp. Av., i, 1850, 237.

*Chlorospingus brunneus* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., x, March, 1874, 395 ("Volcan de Irazú," i. e., Talamanca,<sup>3</sup> Costa Rica; coll. U. S. Nat. Mus.; female; see Salvin, Ibis, 1874, 308).

<sup>1</sup> Six specimens.

<sup>2</sup> Three specimens.

<sup>3</sup> According to José C. Zeledon, collector of the type specimen.

## Genus EUCOMETIS Sclater.

*Eucometis* SCLATER, Proc. Zool. Soc. Lond., 1856, 117. (Type, *Tanagra penicillata* Spix.)

Medium-sized, small-billed, plainly colored Tanagers, with depth of maxilla in front of nostril more than one-third the distance from nostril to tip of maxilla, tail equal to length of wing from bend to tips of secondaries, and occiput with a slight bushy crest; colors yellowish olive-green above, yellow below, the head gray (paler on throat).

Bill subconical, compressed, much shorter than head; exposed culmen less than to more than two-thirds length of tarsus, nearly straight for basal half or more, decidedly convex terminally, with tip slightly uncinatc; gonys decidedly shorter than distance from nostril to tip of maxilla, faintly convex; maxillary tomium straight, faintly deflected basally; mandibular tomium nearly straight to near base, where gradually but rather strongly deflected; depth of bill at base about equal to the basal width, and equal to or a little more than half the length of the exposed culmen. Nostril exposed, roundish, with narrow superior membrane. Rictal bristles hardly obvious. Wing rather long (about three and three-fourths to four times as long as tarsus), rounded (eighth to fifth quills longest, ninth longer than first, sometimes longer than second); primaries exceeding secondaries by length of exposed culmen or more. Tail nearly as long as wing, rounded, its feathers with compact webs and rounded tips. Tarsus decidedly longer than middle toe with claw; outer claw reaching about to base of middle claw; the inner claw not reaching quite so far; hind claw decidedly shorter than its digit. Occiput slightly crested.

*Coloration*.—Plain bright yellowish olive above, saffron or indian yellow beneath; head gray, paler (sometimes nearly white) on throat.



## EUCOMETIS CRISTATA (Du Bus).

## GRAY-CRESTED TANAGER.

*Adults (sexes alike).*—Head and neck gray, paler, and usually streaked with whitish (sometimes inclining to grayish white) on malar region, chin, and throat; crest slightly tinged with olive-yellowish; lores and eyelids dusky gray; rest of upper parts, including lower hindneck, plain yellowish olive-green; under parts of body saffron yellow, becoming gradually paler posteriorly, the under tail-coverts more chrome yellow; bill black or brownish black; legs and feet pale buffy brownish (in dried skins).

*Adult male.*—Length (skins), 163.8–181.6 (169.4); wing, 86.9–94.7 (90.4); tail, 75.4–80.5 (78.2); exposed culmen, 13.7–15.7 (14.7); depth of bill at base, 6.9–7.9 (7.4); tarsus, 21.6–22.9 (22.6); middle toe, 14.7–16.8 (15.5).<sup>1</sup>

*Adult female.*—Length (skins), 172.2–172.7 (172.5); wing, 88.1–91.9 (89.7); tail, 74.2–84.3 (78.5); exposed culmen, 14.7–16 (15.2); depth of bill at base, 6.9–7.4 (7.1); tarsus, 21.3–21.6 (21.6); middle toe, 14.7–16 (15.2).<sup>2</sup>

Veragua (Chitra) to central Colombia.

*Pipilopsis cristata* DU BUS, Bull. Ac. Roy. Brux., xxxii, 1855, 154.

*Eucometis cristata* SCLATER, Proc. Zool. Soc. Lond., 1856, 118, part (monogr.; Santa Marta and Cartagena, Colombia); Synop. Av. Tanagr., 1856, 42; Cat. Am. Birds, 1862, 84 (Santa Marta and Bogota, Colombia); Cat. Birds Brit. Mus., xi, 1886, 218, part (Panama and Paraiso Station, Panama R. R.; Arihueca, Santa Marta, Minca, and Bogotá, Colombia).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 141 (Rio Truando, n. Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 298 (Lion Hill, Panama R. R.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 350 (Lion Hill).—SALVIN and GODMAN, Ibis, 1880, 121 (Santa Marta); Biol. Centr.-Am., Aves, i, 1883, 306, part (Colombian references and localities).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 142 (Santa Marta).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 168 (Bonda, etc., prov. Santa Marta).

[*Eucometis*] *cristata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23.

*Trichothraupis penicillata* (not *Tanagra penicillata* Spix) SCLATER, Proc. Zool. Soc. Lond., 1855, 156 (Bogota).

## EUCOMETIS SPODOCEPHALA SPODOCEPHALA (Bonaparte).

## GRAY-HEADED TANAGER.

Similar to *E. cristata*, but gray of head and neck much darker; crest less developed, with feathers distinctly outlined instead of blended; tail shorter; bill much smaller.

<sup>1</sup> Six specimens.

<sup>2</sup> Three specimens.

colored species of *Piranga*, but outermost (ninth) primary shorter than second (instead of decidedly longer than third); adult males with a scarlet crown-patch and with more or less red on under parts (sometimes confined to the throat); females and young brown or olive above, paler below.

Bill as in the more slender-billed species of *Piranga*, but narrower (width at base scarcely if at all exceeding basal depth), the gonys relatively shorter, and distinctly, though slightly, convex, and maxillary tomium without any indication of a tooth-like projection. Nostrils narrower. Rictal bristles strong, conspicuous, and frontal bristles (over nostrils) well developed. Wing about three and three-fourths to a little more than four times as long as tarsus, much rounded (seventh to fourth primaries longest, ninth shorter than second); primaries exceeding secondaries by much less than length of tarsus. Tail shorter than wing by much less than length of tarsus, sometimes nearly as long as wing, more or less rounded, the rectrices rather broad, with rather loose webs and somewhat pointed tips. Tarsus decidedly longer than middle toe with claw; outer claw reaching about to or a little beyond base of middle claw, the inner claw falling short of the latter; hind claw shorter than its digit.

*Coloration*.—Adult males reddish brown, reddish gray, or dusky, with bright red throat and crown, the feathers of the latter sometimes developed into a more or less obvious crest; females and young usually brownish above, paler beneath, with or without a yellowish-buffy or tawny crown-patch; adult female sometimes similar to the male, but duller.

*Range*.—Southern Mexico to southern Brazil, Paraguay, Bolivia, and western Ecuador.





- dd.* Under parts dull vinaceous-pink, clearer pink on throat. (Pacific coast, territory of Tepic.) . . . ***Phoenicotheraupis rubica roseus***, adult male (p. 147)
- bb.* Scarlet crown-patch not margined laterally with a line of black or blackish brown; lores and suborbital region dusky or sooty grayish; chin and sides of upper throat dusky or sooty grayish.
- c.* Back, etc., reddish dusky; tail not distinctly reddish. (Southeastern Nicaragua to northeastern Colombia.) . . ***Phoenicotheraupis fuscicauda***, adult male (p. 152)
- cc.* Back, etc., brownish red, grayish red, or reddish brown. (*Phoenicotheraupis salvini*, adult male.)
- d.* Back, etc., brownish red or grayish red; under parts of body but slightly tinged with gray.
- e.* Paler; light grayish red above.
- f.* Paler and more grayish. (Mugeres and Meco islands, Yucatan.)  
***Phoenicotheraupis salvini insularis***, adult male (p. 152)
- ff.* Darker and less grayish. (Peninsula of Yucatan.)  
***Phoenicotheraupis salvini peninsularis***, adult male (p. 151)
- ee.* Darker; deep brownish red above.
- f.* Throat poppy red; more purplish red above and below. (Coast plain of eastern Mexico, from southern Tamaulipas to Tabasco.)  
***Phoenicotheraupis salvini littoralis***, adult male (p. 149)
- ff.* Throat vermilion red or scarlet; more brownish red above and below. (Southeastern Mexico, except coastal plain, to northern Honduras.)  
***Phoenicotheraupis salvini salvini***, adult male (p. 148)
- dd.* Back, etc., reddish brown; under parts of body strongly tinged with grayish. (Southern Honduras to eastern Nicaragua.)  
***Phoenicotheraupis salvini discolor***, adult male (p. 150)
- aa.* General color olive or brownish, the throat yellow or yellowish. (Adult females and immature males.)
- b.* Center of crown and occiput distinctly yellowish, ochraceous, or tawny, or else throat not yellowish or salmon color.
- c.* Darker; more decidedly olivaceous below; crown-patch more tawny-ochraceous.
- d.* Back, chest, etc., ochreous olive; crown-patch ochraceous or tawny.  
***Phoenicotheraupis rubica rubicoides***, adult female and young male (p. 144)
- dd.* Back, chest, etc., more greenish olive; crown-patch more yellowish ocher.
- e.* Darker above, paler below, the abdomen pale buff; smaller (wing averaging 82, tail 69.5).  
***Phoenicotheraupis rubica nelsoni***, adult female (p. 146)
- ee.* Paler above, darker below, the abdomen olive-buff or buffy olive; larger (wing averaging 85.3, tail 77.2).  
***Phoenicotheraupis rubica vinacea***, adult female (p. 146)
- cc.* Paler; more ochraceous or buffy below; crown-patch more buffy, less distinct (sometimes obsolete).
- d.* Deeper colored; larger (wing 91.9, tail 85.1, exposed culmen 17.0).  
***Phoenicotheraupis rubica affinis***, adult female and young male (p. 147)
- dd.* Paler; smaller (wing 81.5–83.8, tail 78.2–80.0, culmen 14.7–15.2).  
***Phoenicotheraupis rubica roseus***, adult female and young male (p. 147)
- bb.* Center of crown and occiput not yellowish, ochraceous, or tawny, but concolor with rest of pileum, or else tinged with red; throat yellowish or salmon color, in more or less strong contrast with color of chest.
- c.* Above brown; chest tawny brown or cinnamon-brownish
- d.* Throat yellow; chest tawny brown; back darker brown; tail bistre or sepia brown; occiput not tinged with red.  
***Phoenicotheraupis salvini salvini***, adult female and young male (p. 148)  
***Phoenicotheraupis salvini discolor***, adult female and young male (p. 150)

*dd.* Throat ochraceous-buff, ochraceous-rufous, or dull salmon color; lighter brown; tail light mass brown or cinnamon-brown; occiput tin with red.

*Phenicotherapis salvini littoralis*, adult female and young male (p. cc. Above, olive or deep olive-brown; chest olive or yellowish olive.

*Phenicotherapis fuscicauda*, adult female and young male (p.

**PHENICOTHRAPIS RUBICA RUBICOIDES (Lafresnaye).**

**MEXICAN ART Tanager.**

*Adult male.*—Median portion of crown and occiput scarlet, form a bushy erectile crest of elongated narrow feathers, this scarlet pe or crest bordered laterally by a narrow stripe of black or black brown; forehead, sides of head, and upper parts (except as describ plain dull brownish red (deep brick red, liver brown, or be under parts reddish, changing gradually from light vermilion or scarlet on throat to dull vinaceous on flanks and dull flesh color margins of under tail-coverts, the central portion of which is dul more grayish red; maxilla blackish brown; mandible horn brown; brown;<sup>1</sup> legs and feet horn brown; length (skins), 165.1–184.2 (174 wing, 90.7–98.6 (94.2); tail, 77–86.1 (81.5); exposed culmen, 15–1 (15.7); depth of bill at base, 8.4–9.9 (9.4); tarsus, 23.1–26.7 (24 middle toe 14.7–17.3 (16).<sup>2</sup>

*Adult female.*—Pileum deep or dark olive anteriorly or latera inclosing a more or less distinct elongated patch of ocher-yellow ochraceous, or tawny, the feathers of this patch more or less tip with olive; rest of upper parts plain light olive, olive-brown, or slight ochraceous olive; under parts paler ochraceous-olive, still paler (possibly tinged with yellow on throat, the flanks, lower part or more of

*Immature male*.—Similar to the adult female, and not always distinguishable, but usually more rufescent in coloring; sometimes russet-brown above, the primaries and rectrices decidedly russet, crown-patch deep tawny, and under parts strongly tinged with tawny, especially on throat and chest.

*Young (first plumage)*.—Above plain olive-brown, the crown without any distinct patch, or none, of ochraceous; primaries and rectrices lighter, more yellowish olive or raw umber brown; under parts plain buffy olive, the abdomen, under tail-coverts, and throat buffy wood brown, the last paler.

Southern Mexico, in States of Vera Cruz (Jalapa, Papantla, Cordova, etc.), Oaxaca (Playa Vicente, Guichicovi, etc.), and southward through Guatemala to Honduras<sup>1</sup> (San Pedro; Omoa to Chilomo).

*Salt[ator] rubicoides* LAFRESNAYE, Rev. Zool., vii, 1844, 41 (Mexico).

*Ph[oenicotheraupis] rubicoides* CABANIS, Mus. Hein., i, 1850, 24 (Mexico).

*Phaenicothraupis rubicoides* SCLATER, Ann. & Mag. N. H., 2d ser., xiii, 1854, 25; Proc. Zool. Soc. Lond., 1856, 120, part (monogr.; Papantla and Jalapa, Vera Cruz; Guatemala), 303 (Cordova, Vera Cruz); 1859, 364 (Jalapa), 377 (Playa Vicente, Oaxaca); 1864, 173 (Valley of Mexico); Synop. Av. Tanagr., 1856, 44; Cat. Am. Birds, 1862, 83 (Mexico; Guatemala).—SCLATER and SALVIN, Ibis, 1859, 15 (Guatemala); Proc. Zool. Soc. Lond., 1870, 836 (San Pedro, Honduras).—MOORE, Proc. Zool. Soc. Lond., 1859, 58 (Omoa to Chilomo, Honduras).—SALVIN and SCLATER, Ibis, 1860, 32 (Yzabal, Guatemala).—CASSIN, Proc. Ac. Nat. Sci. Phila., v, 1866, 173 (City of Mexico).—SUMCHRAST, Mem. Bost. Soc. N. H., i, 1869, 549 (tierra caliente, Vera Cruz).—SALVIN, Cat. Strickland Coll., 1882, 193 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 300 (Yzabal, Choctum, Alotenango, Savana Grande, Escuintla, Costa Grande, and Retalhuleu, Guatemala; Omoa, Honduras, etc.).—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 27 (Jalapa, Vera Cruz).

[*Phaenicothraupis*] *rubicoides* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22, part.

*Phaenicothraupis vinacea* (not of Lawrence) BOUCARD, Liste Ois. Guat., 1878, 33.

*Phaenicothraupis rubicoides* LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 19 (Guichicovi, Oaxaca).

*Phaenicothraupis rubicoides* BOUCARD, Liste Ois. Guat., 1878, 33.

*Saltator rubicus* (not of Vieillot) CASSIN, Proc. Ac. Nat. Sci. Phila., iv, 1865, 90 (foot of Cofre del Perote, Vera Cruz).

*Tanagra ignicapilla* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1831, 2 (*nomen nudum*; Papantla,<sup>2</sup> Vera Cruz, Mexico); Journ. für Orn., 1863, 56.

[*Phaenicothraupis*] *ignicapilla* FINSCH, Proc. Zool. Soc. Lond., 1870, 581, in text (Guatemala).

#### PHÆNICOTHTHAUPIS RUBICA NELSONI Ridgway.

##### NELSON'S ANT TANAGER.

Similar to *P. r. rubicoides* but smaller and much duller in color, with underparts much paler; adult male with back, etc., reddish chestnut instead of deep brick red, liver brown, or bay, the throat pale coral

<sup>1</sup> No Honduras specimens have been seen by me.

<sup>2</sup> According to Salvin and Godman, Biol. Centr.-Am., Aves, i, 1883, 300.

red or reddish flesh color instead of light vermilion or scarlet; adult female with back, etc., more olive, the abdomen very pale buffy.

*Adult male*.—Length (skins), 167.8–185 (178.2); wing, 88–97 (90.8); tail, 76–83 (78.5); exposed culmen, 16; tarsus, 22–24 (23.5); middle toe, 14–16 (14.7).<sup>1</sup>

*Adult female*.—Length (skin), 166; wing, 82; tail, 69.5; exposed culmen, 16; tarsus, 23; middle toe, 15.<sup>2</sup>

Peninsula of Yucatan (Puerto Morelos) including Campeche (Apazote).

*Phœnicotheraupis rubicoides* (not *Saltator rubicoides* Lafresnaye) CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 279 (Chichen Itza, Yucatan).

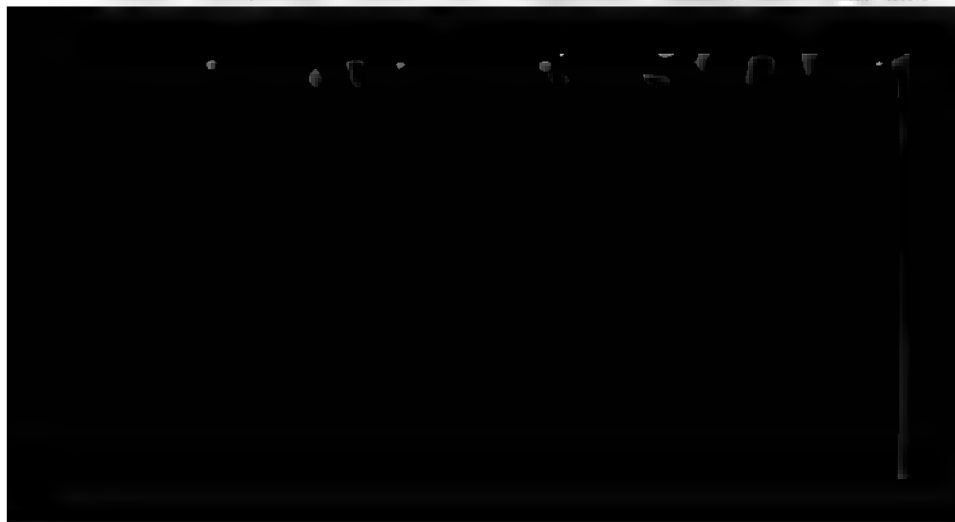
#### PHŒNICOTHTHAUPIS RUBICA VINACEA (Lawrence).

##### VINACEOUS-THROATED ANT Tanager.

Similar to *P. r. rubicoides* but adult male with under parts duller reddish, especially on throat, and adult female more greenish olive above, more yellowish olive below.

*Adult male*.—Above exactly as in *P. r. rubicoides* but scarlet crest encroaching more on the forehead, where extending almost to base of culmen; beneath as in *P. r. rubicoides*, but throat duller red, obsoletely streaked with still duller brownish red; length (skins), 170–188 (179.7); wing, 91.9–97 (94.2); tail, 81.5–83 (82.5); exposed culmen, 15–16 (15.7); depth of bill at base, 9.5–10 (9.8); tarsus, 24.4–24.9 (24.5); middle toe, 16–16.5 (16.1).<sup>1</sup>

*Adult female*. Above light ochraceous-olive, more greenish than in *P. r. rubicoides*; sides of pileum darker than back, the median portion dull ochraceous or ochre-yellowish; under parts light ochraceous-olive on chest, similar but duller on sides and flanks, the throat and



*Phænicothraupis rinacea* ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Tamborde, Alajuela, and Guaitil, Costa Rica).

*Phænicothraupis rubica?* (not *Saltator rubicus* Vieillot) SALVIN, Proc. Zool. Soc. Lond., 1867, 139 (Santa Fé, Veragua; crit.).

**PHÆNICOTHRAUPIS RUBICA AFFINIS (Nelson).**

**OAXACA ANT Tanager.**

Similar to *P. r. rubicoides*, but much paler.

*Adult male*.—Grayish brick red above, dull flesh color below, slightly brighter on throat, darker and duller on chest, the sides and flanks still duller and strongly tinged with brownish gray.

*Adult female*.—Light olive above (more yellowish on tail and outer webs of primaries) the crown with an indistinct dusky stripe along each side and the central portion, indistinctly, light ochraceous; underparts nearly uniform brownish buff or clay color, lighter, more decidedly buffy on throat, abdomen, and under tail-coverts, darker on flanks.

*Adult male*.—Length (skin), 190.5; wing, 91.9; tail, 83.3; exposed culmen, 17; depth of bill at base, 9.9; tarsus, 25.4; middle toe, 15.5.

*Adult female*.—Length (skin), 185.4; wing, 91.9; tail, 85.1; exposed culmen, 17; depth of bill at base, 9.9; tarsus, 25.4; middle toe, 15.2.

Pacific slope of Oaxaca (Pinotepa) and Guerrero(?).

*Phænicothraupis rubicoides affinis* NELSON, Auk, xiv, Jan., 1897, 66 (Pinotepa, Oaxaca, s. w. Mexico; coll. U. S. Nat. Mus.).

**PHÆNICOTHRAUPIS RUBICA ROSEUS (Nelson).**

**ROSY ANT Tanager.**

Similar in coloration to *P. r. affinis*, but still paler, the adult male more pinkish, the adult female more greenish above and more yellowish below.

*Adult male*.—Above similar to *P. r. affinis*, but crest poppy red rather than scarlet, and general color of back, wings, etc., rather warmer reddish; beneath deep vinaceous-pink, clearer and deeper on throat and chest, paler on abdomen and under tail-coverts, much grayer on sides and flanks; length (skin), 182.9; wing, 92.7; tail, 85.9; exposed culmen, 16.5; depth of bill at base, 9.9; tarsus, 24.9; middle toe, 15.5.<sup>1</sup>

*Adult female*.—Above light greenish olive, the median portion of crown indistinctly ochraceous (this sometimes obsolete); beneath varying from pale dull clay color (more buffy on throat, abdomen, and under tail-coverts) to pale dull buff-yellowish, tinged on chest, sides, and flanks with pale grayish olive; length (skins), 175.3–177.8 (176.5); wing, 81.5–83.8 (82.6); tail, 78.2–80 (79); exposed culmen, 14.7–15.2 (15); depth of bill at base, 8.9–9.9 (9.4); tarsus, 24.1; middle toe, 15–15.2.<sup>2</sup>

<sup>1</sup> One specimen (the type).

<sup>2</sup> Two specimens.

Pacific coast district of western Mexico, in Territory of Tepic (San Sebastian; Arroyo de Juan Sanchez).

*Phenicothraupis rubicoides roseus* NELSON, Proc. Biol. Soc. Wash., xii, Mar. 24, 1898, 60 (Arroyo de Juan Sanchez, Jalisco, Mexico; coll. U. S. Nat. Mus.).

**PHENICOTHRAUPIS SALVINI SALVINI** Berlepsch.

**SALVIN'S ANT Tanager.**

Similar to *P. fuscicauda* in absence of distinct black lateral border to the scarlet crest, brown or dusky tips to feathers of the latter, and conspicuously yellow throat and absence of colored crown-patch in adult females, but coloration much redder in adult males, much browner, or less olivaceous in females.

*Adult male*.—Above plain brick red or liver brown (more purplish than in *P. rubicoides*), the remiges deep grayish brown terminally; median portion of crown and occiput bright vermilion or scarlet, the feathers tipped with dark reddish brown; lores, suborbital region, and anterior portion of malar region dusky, the chin similar but paler (dull brown or grayish brown); throat clear vermilion red, changing on under parts of body to brownish red, this changing on flanks to much duller grayish red or dusky vinaceous; under tail-coverts light vermilion red, duller (pale grayish red) medially; bill black; legs and feet light horn brownish; length (skins), 177.8–209.6 (198.1); wing, 93.7–109 (102.1); tail, 85.6–99.6 (94.5); exposed culmen, 14.7–17.5 (16.5); depth of bill at base, 7.9–9.4 (8.6); tarsus, 25.9–28.5 (26.9); middle toe, 16.3–18.8 (17.5).<sup>1</sup>

*Adult female*.—Above, including sides of head, plain deep umber brown, without lighter or differently colored space in center of

Benito; El Salto), and southward through Guatemala to northern Honduras.

*Phænicothraupis rubicus* (not *Saltator rubicus* Vieillot) SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 549 (tierra caliente, Vera Cruz).

*Phænicothraupis fuscicauda* (not of Cabanis) LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 19 (Guichicovi, Oaxaca).

(?) *Phænicothraupis fuscicauda* (not of Lawrence) LANTZ, Trans. Kansas Acad. Sci., 1896-97 (1899), 223 (Naranjo, Guatemala).

*Phænicothraupis salvini* BERLEPSCH, Ibis, 5th ser., i, Oct., 1883, 487, pl. 13 (Guatemala; coll. Count von Berlepsch).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 303, part (Vera Cruz; Guichicovi, Oaxaca; Corosal and Belize, British Honduras; Chisec, Guatemala).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 200, part (Tehuantepec, Oaxaca; Belize and Corosal, British Honduras; Chisec, Guatemala).

*Phænicothraupis salvini salvini* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 150, in text.

### PHÆNICOTHRAUPIS SALVINI LITTORALIS (Nelson).

#### TABASCO ANT Tanager.

Similar to *P. s. salvini*, but adult male much more purplish or rosy red and adult female and immature male much more reddish, with throat deep ochraceous-buff or dull orange to ochraceous-rufous tinged with red instead of yellow, and under parts of body tawny-ochraceous to cinnamon-rufous, tinged with red medially.

*Adult male*.—Above plain deep brick red; wings grayish brown (deep hair brown), with brick red edgings, this color occupying whole outer web of tertials; primaries edged for basal half with pale brick red, for terminal portion with pale grayish brown; median portion of crown and occiput poppy red, the feathers with tips extensively dark reddish brown; lores, suborbital region, anterior portion of malar region, chin, and sides of upper throat dusky brownish gray or sooty; throat poppy red; rest of under parts changing from dark or dull poppy red on chest to paler, more vinaceous, red on abdomen and to dark vinaceous on flanks; under tail-coverts pale poppy red or deep flesh-pink, tinged with grayish on median portion of each feather; bill black, the mandible sometimes more brownish basally; legs light horn brownish, the toes somewhat darker; length (skins), 205.7-213.1 (208.3); wing, 101.6-106.7 (104.4); tail, 90.4-99.3 (95.5); exposed culmen, 17.8-19.8 (19.1); depth of bill at base, 10.2-10.7 (10.4); tarsus, 25.4-28.2 (26.7); middle toe, 16-17.5 (16.8).<sup>1</sup>

*Adult female*.—Above deep mars brown, the center of crown and occiput more or less strongly tinged with brownish red; lores, suborbital region, anterior portion of malar region, and chin dull grayish or brownish gray; throat varying from orange-buff to deep salmon-color or dull saturn red; chest cinnamon-rufous or deep tawny, fading into tawny-ochraceous or paler cinnamon-rufous on abdomen, the sides and

<sup>1</sup> Six specimens.

flanks russet; under tail-coverts clear tawny; maxilla blackish, mar-  
ble brownish or blackish, or the former basally, the latter termina-  
legs and feet as in adult male; length (skins), 179.8–197.1 (187  
wing, 89.4–98 (93.5); tail, 82–87.9 (84.6); exposed culmen, 15.7  
(17.3); depth of bill at base, 9.4–10.4 (9.9); tarsus, 25.1–26.4 (25  
tarsus, 25.1–26.4 (25.7); middle toe, 15–16.5 (16).<sup>1</sup>

*Immature male.*—Similar to the adult female, but usually(?) m  
reddish (throat dull saturn red to pale dull vermilion), under pe  
tinged with red, and median portion of crown and occiput dull reddi

Coast plain of eastern Mexico, from southern Tamaulipas (A  
Mira; Tampico) to Chiapas (El Salto) and Tabasco (Frontera).

*Phenicothraupis fuscicauda salvini* RICHMOND, Proc. U. S. Nat. Mus., xviii, A  
12, 1896, 631 (Alta Mira, Tamaulipas).

*Phenicothraupis littoralis* NELSON, Auk, xviii, Jan., 1891, 48 (Frontera, Tabas-  
c. e. Mexico; coll. U. S. Nat. Mus.).

#### PHENICOTHRAUPIS SALVINI DISCOLOR Ridgway.

##### NICARAGUAN ANT Tanager.

*Adult male.*—Similar to *P. s. salvini*, but upper parts much dull  
in color (chocolate instead of purplish brick red or liver brown  
throat paler vermilion or scarlet, and under parts of body paler or  
much more tinged with gray, the flanks decidedly grayish; length  
(skins), 180.3–190.5 (185.9); wing, 92.5–99.1 (96.5); tail, 84.8–90  
(87.1); exposed culmen, 17.3–19.1 (17.8); depth of bill at base, 8.1–9  
(8.9); tarsus, 25.4–26.2 (25.7); middle toe, 15.2–17.3 (16.5).<sup>2</sup>

*Adult female.* Not always distinguishable from that of *P. s. s.  
vini*, but sometimes a little more olive in coloring, especially the ta  
length (skins), 170.2–195.6 (181.4); wing, 84.1–92.2 (88.9); tail, 76.





*Phænicothraupis rubicoides* (not *Saltator rubicoides* Lafresnaye) NUTTING, Proc. U. S. Nat. Mus., vi, 1883, 382 (Sucuyá, Nicaragua; habits).

*Phænicothraupis salvini* (not of Berlepsch) RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 585 (Segovia R., Honduras).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 490 (Rio Escondido and Greytown, Nicaragua; habits).

*Phænicothraupis salvini discolor* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 150 (Rio Escondido, Nicaragua; coll. U. S. Nat. Mus.).

**PHÆNICOTHTHAUPIS SALVINI PENINSULARIS** Ridgway.

**YUCATAN ANT TANAGER.**

*Adult male*.—Similar to that of *P. s. salvini*, but much paler; above dull brick red, paler and more tinged with grayish on sides of pileum and on forehead, especially the latter; wings grayish brown or drab, tinged with dull reddish, the coverts and secondaries with more decidedly reddish edgings, the primaries edged with pale reddish gray; tail similar in color to back, but lighter (light dull vinaceous-rufous); median portion of crown and occiput scarlet, the feathers with brownish tips; lores, suborbital region and anterior portion of malar region sooty brownish; chin and lateral margin of upper throat sooty grayish; throat and chest light vermilion red, becoming gradually duller posteriorly, when gradually becoming paler and more tinged with gray, the flanks dull vinaceous; length (skins), 186–200 (193.8); wing, 98–104 (101.2); tail, 82–104 (90.4); exposed culmen, 15–17 (16); tarsus, 24–28 (26.4); middle toe, 16–18 (17).<sup>1</sup>

*Immature male*.—Very much paler than the immature male or adult female of *P. s. salvini* and much grayer above; upper parts plain light brown (broccoli brown with a tinge of wood brown), becoming more ochreous or tawny brown (light raw umber) on rump and upper tail-coverts; pileum (except laterally) brighter, more ochraceous (ochraceous-cinnamon); throat pale ocher yellow; rest of under parts dull ochraceous, darker across chest, browner (grayish cinnamon) on sides and flanks, paler (buff-yellowish) on abdomen.

This form seems to be very close to *P. insularis*, which I have not seen; but since the describers of *P. insularis* compare it with Yucatan specimens, which they refer to *P. salvini*, though the paler color of Yucatan specimens is alluded to, I can only conclude that the mainland and island birds are different.

Peninsula of Yucatan (Izalam; Calotmul; Puerto Morelos; La Vega).

*Phænicothraupis rubicoides* (not *Saltator rubicoides* Lafresnaye) BOUCARD, Proc. Zool. Soc. Lond., 1883, 443 (Izalam, n. Yucatan).

*Phænicothraupis salvini* BERLEPSCH, Ibis, 1883, 487, part (Izalam, n. Yucatan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 303, part (Izalam, n. Yucatan).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 200, part (Izalam).

*Phænicothraupis salvini peninsularis* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 150 (Izalam, n. Yucatan; coll. U. S. Nat. Mus.).

<sup>1</sup>Seven specimens. Two adult males from Canasayát, Campeche, average, wing, 104.5; tail, 90.5; exposed culmen, 16.5; tarsus, 25.5; middle toe, 16.5.

**PHENICOTHAUPIS SALVINI INSULARIS (Salvin).**

**ISLAND ANT Tanager.**

Similar to *P. s. peninsularis*, but still paler and grayer.

*Adult male.*—Above grayish red, wings and tail more dusky, slightly edged with olivaceous; vertical crest bright red, without black margin; beneath pale red, the throat clearer, the breast and flanks tinged with gray; bill horn color; feet hazel. Total length, 198.1; wing, 101.6; tail, 91.4; bill to rictus, 21.6; tarsus 25.4. (Free translation of original description.)

*Adult female.*—Above cinnamon; throat and median portion of abdomen fawn color. (Translation of original description.)

According to Salvin this form is near *P. salvinii*, but is much paler and grayer above, and beneath very much paler.

Meco Island and Muges Island, off coast of Yucatan.

*Phenicothraupis insularis* SALVIN, Ibis, 5th ser., vi, Apr., 1888, 259 (Meco and Muges islands, Yucatan; coll. Salvin and Godman).

*Phenicothraupis salvinii insularis* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 150, in text.

**PHENICOTHAUPIS FUSCICAUDA Cabanis.**

**DUSKY-TAILED ANT Tanager.**

*Adult male.*—Upper parts dark chocolate brown, varying to seal brown; remiges dusky, the secondaries edged with dull chocolate brown, the primaries with brownish gray; rectrices dusky edged with dark purplish brown or chocolate; median portion of pileum bright vermilion or scarlet, the feathers with chocolate-brown tips; sides of

ochraceous-olive, passing into lighter and more grayish olive on abdomen and into deep olive-brown on sides, flanks, and under tail-coverts; bill and feet as in adult male, the former sometimes more brownish; length (skins), 175.3–190.5 (184.7); wing, 86.6–95.3 (91.7); tail, 78.7–86.4 (83.1); exposed culmen, 16.3–18.3 (17.5); depth of bill at base, 8.4–10.2 (9.1); tarsus, 24.9–26.9 (25.9); middle toe, 15.7–17.5 (16.5).<sup>1</sup>

Southern Nicaragua (Greytown; Los Sábalos) to northern Colombia (Santa Marta).

*Phornicothraupis fuscicauda* CABANIS, Journ. für Orn., ix, Mar., 1861, 86 (Costa Rica; coll. Berlin Mus.).—FRANTZIUS, Journ. für Orn., 1869, 299 (Angostura and Sarapiquí, Costa Rica).

*Phornicothraupis fuscicauda* LAWRENCE, Ann. Lyc. N. Y., viii, 1863, 469 (Lion Hill, Panama R. R.); viii, 1865, 179 (Greytown, Nicaragua); ix, 1868, 99 (Angostura, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 350 (Lion Hill; crit.).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 55 (San Carlos, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 302 (Bebedero, Gulf of Nicoya, and San Carlos, w. Costa Rica, etc.).—NUTTING, Proc. U. S. Nat. Mus., 1884, vi, 400 (Los Sábalos, Nicaragua).—RIDGWAY, Proc. U. S. Nat. Mus., vi, 1884, 414 (Pacuare, Costa Rica).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 199, part (Nicoya, Costa Rica; Panama and Lion Hill, Panama R. R.; Santa Marta, Colombia).

[*Phornicothraupis*] *fuscicauda* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22.

*Phornicothraupis fuscicauda* ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Panama).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 490 (Rio Frio, Costa Rica).

*Phornicothraupis rubicoides* (not *Saltator rubicoides* Lafresnaye) LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1865, 171 (Costa Rica).

*Phornicothraupis erythrolæma* SCLATER, Cat. Am. Birds, 1862, 83 (Santa Marta, Colombia; coll. P. L. Sclater; ex Bonaparte, manuscript).

*Phornicothraupis fuscicauda erythrolæma* BANGS, Proc. New Engl. Zool. Club, ii, Sept. 20, 1900, 30 (Loma del Leon, Panama R. R.; crit.).

<sup>1</sup> Ten specimens.

Specimens from different localities average as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Two adult males from southern Nicaragua.....	97.3	88.4	17.5	9.1	25.9	17.0
Three adult males from Costa Rica.....	102.4	90.7	17.8	9.4	26.2	17.3
Seven adult males from Isthmus of Panama.....	101.9	93.0	17.5	8.9	26.4	17.3
FEMALES.						
One adult female from southern Nicaragua.....	86.6	78.7	17.8	8.4	25.9	16.8
Five adult females from Costa Rica.....	91.4	82.0	17.5	8.9	25.7	16.8
Four adult females from Isthmus of Panama.....	94.2	85.3	17.8	9.7	26.2	16.5

Some specimens from the Isthmus of Panama are paler than those from Costa Rica and Nicaragua, the adult males slightly more reddish above and the females more olive (less brown); but the difference is so slight and so inconstant (judging by the small series examined) that it does not seem justifiable to recognize a southern form.

## Genus CHLOROTHRAUPIS Ridgway.

*Chlorothraupis* "Ridgway, Pr. U. S. Nat. Mus., 1883," SALVIN and GODM.  
 Biol. Centr.-Am., Aves, i, Dec., 1883, 297.—RIDGWAY, Proc. U. S. Nat. Mu-  
 vi, no. 26, Apr. 11, 1884, 412. (Type, *Phainothraupis carmichi* Lawrence)

Medium sized, plainly colored Tanagers related to *Phainothraupis* but with tail decidedly shorter than wing from bend to tips of secondaries, and with feathers of crown not elongated; sexes alike in color olive-green above, more yellowish below.

Bill strong, with nearly straight outlines but decurved at tip, rather deeper than broad at base, the basal depth nearly equal to length of gonys; exposed culmen about five-sixths as long as tarsus, slightly convex or nearly straight to near tip, where distinctly decurved and moderately uncinat; gonys decidedly shorter than distance from nostril to tip of maxilla, slightly convex, ascending terminally; maxillarium slightly notched subterminally, nearly straight, but perceptibly convex in middle portion. Nostril exposed, longitudinal, very small, narrow, with broad superior membrane. Rictal bristles distinct. Wing about four times as long as tarsus, rounded (seventh primary longest, ninth shorter than third); primaries exceed secondaries by much less than length of tarsus. Tail about two-thirds as long as wing or a little more, slightly rounded, the rectrices rather narrow, with slightly pointed tips. Tarsus decidedly longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw decidedly shorter than its digit.

*Coloration*.—Uniform dull olive-green above, lighter and more yellowish below.

*Range*.—Costa Rica to Peru. (Three species.)

This genus comes nearest apparently to *Piranga* from which



greenish laterally; rest of under parts plain light olive-green, becoming slightly more yellowish on abdomen.<sup>1</sup>

*Adult male*.—Length (skin), 154.9; wing, 88.9; tail, 60.5; depth of bill at base, 10.2; tarsus, 22.1; middle toe, 14.7.<sup>2</sup>

Isthmus of Panama (Rio Truando) and southward through Colombia to Ecuador (Pasto).

*Orthogomys olivaceus* CASSIN, Proc. Ac. Nat. Sci. Phila., xii, 1860, 140 (valley of the Rio Truando, n. Colombia; coll. U. S. Nat. Mus.); 1864, 287, pl. 2.—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 502 (Remedios, prov. Antioquia, Colombia; crit.).

*Chlorothraupis olivacea* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, sig. 38, Dec., 1883, 298 (valley of Truando; Pasto, Ecuador).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 195 (Remedios and Nichi, prov. Antioquia, Colombia; Pasto, Ecuador).

### CHLOROTHRAUPIS CARMOLI (Lawrence).

#### CARMOL'S TANAGER.

*Adults (sexes alike)*.—Above plain bright olive-green; beneath yellowish olive-green medially, olive-green (like upper parts) on sides and flanks, the throat yellow or olive-yellow, streaked with pale grayish olive; maxilla brownish black, mandible paler, more horn colored; iris brown; legs and feet horn color (in dried skins).

*Adult male*.—Length (skins) 157.5–176.5 (167.1); wing, 88.9–94 (90.9); tail, 66–67.8 (66.5); exposed culmen, 15.7–17.8 (16.8); depth of bill at base, 9.7–10.2 (9.9); tarsus, 22.4–24.1 (23.1); middle toe, 14–15.7 (15).<sup>3</sup>

*Adult female*.—Length (skin), 157.5; wing, 85.1; tail, 61.5; exposed culmen, 17; depth of bill at base, 9.7; tarsus, 22.4; middle toe, 13.2.<sup>4</sup>

Nicaragua (Chontales), Costa Rica (Angostura; Turrialba; Rio Sucio; Valsa), and southward to northern Peru (valley of Cosnipata).

*Phainothraupis carmoli* LAWRENCE, Ann. Lye. Nat. Hist. N. Y., ix, Apr., 1868, 100 (Angostura, Costa Rica; coll. U. S. Nat. Mus.).—SALVIN, Ibis, 1869, 313 (crit.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1873, 186 (valley of Cosnipata, s. e. Peru).—RIDGWAY, Proc. U. S. Nat. Mus., vi, 1883, 411 (crit.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, pl. 20, fig. 1.—TACZANOWSKI, Orn. du Pérou, ii, 1885, 499.

*Phoenicothera carmoli* FRANTZIUS, Journ. für Orn., 1869, 299 (Costa Rica).

[*Phainothraupis*] *carmoli* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22.

*Chlorothraupis carmoli* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, sig. 38, Dec., 1883, 299 (Chontales, Nicaragua; Angostura and Volcan de Turrialba, Costa Rica; Cosnipata, s. e. Peru).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 194.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Rio Sucio, Costa Rica).

<sup>1</sup>The bill and feet of the single specimen examined are in a condition which does not permit of their color being described.

<sup>2</sup>One specimen, the type. This has the tip of the bill broken off.

<sup>3</sup>Three specimens.

<sup>4</sup>One specimen.

## Genus NESOSPINGUS Sclater.

*Nesospingus* SCLATER, Ibis, 5th ser., iii, July, 1885, 273. (Type, *Chlorospingus speculiferus* Lawrence.)

Medium-sized, plainly colored Tanagers with outermost (ninth) primary shorter than fourth (sometimes shorter than third); coloration plain olive above with a small white spot at base of primaries; whitish beneath.

Bill subconical, rather stout; exposed culmen nearly two-thirds as long as tarsus, nearly straight basally, gradually convex for terminal half; gonys slightly convex, nearly as long as maxilla from nostril; depth of bill at base decidedly greater than its width; maxillary tomium nearly straight, slightly notched subterminally, gradually and slightly deflected basally; mandibular tomium slightly convex terminally, straight in middle portion, gradually though decidedly convex and deflected basally. Nostril exposed, small, roundish, in anterior end of nasal fossae. Rictal bristles very weak, hardly obvious. Wing about three and four-fifths times as long as tarsus, rounded (seventh, sixth, and fifth primaries longest, ninth shorter than sixth, sometimes shorter than seventh), primaries exceeding secondaries by less than length of tarsus. Tail shorter than wing by about length of tarsus, very slightly rounded, the rectrices moderately broad, with firm webs and rounded, though rather narrow, tips. Tarsus decidedly longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw shorter than its digit, strongly curved.

*Coloration.* Above plain grayish brown, with white spot at base of primaries; beneath white, slightly flecked on breast with grayish.

*Range.* Island of Porto Rico, Greater Antilles. (Monotypic.)

*Adult male*.—Length (skins), 159.3–171.2 (163.3); wing, 81.8–86.1 (85.1); exposed culmen, 15.5–17.3 (16.3); depth of bill at base, 9.7–9.9 (9.9); tarsus, 22.6–24.9 (23.4); middle toe, 15–15.7 (15.5).<sup>1</sup>

*Adult female*.—Length (skins), 152.1–154.9 (153.7); wing, 77.7–78.2 (78); tail, 60.5–62 (61.2); exposed culmen, 15.5–15.7; depth of bill at base, 9.4–9.7; tarsus, 23.6–24.1 (23.9); middle toe, 14.7–15.2 (15).<sup>2</sup>

Island of Porto Rico, Greater Antilles.

*Chlorospingus? speculiferus* LAWRENCE, Ibis, 3d ser., v, July, 1875, 383, pl. 9, fig. 1 (Porto Rico; coll. U. S. Nat. Mus.).

*Chlorospingus speculiferus* GUNDLACH, Journ. für Orn., 1878, 168; 1882, 161 (descr. nest and eggs); Anal. Soc. Esp. Hist. Nat., vii, 1878, 190.

[*Chlorospingus*] *speculiferus* CORY, List Birds W. I., 1885, 11.

*Nesospingus speculiferus* SCLATER, Ibis, 1885, 273; Cat. Birds Brit. Mus., xi, 1886, 272.—CORY, Auk, iii, 1886, 199 (synonymy and descr.); Birds W. I., 1889, 86 (do.); Cat. W. I. Birds, 1892, 16, 114, 132.

[*Nesospingus*] *speculiferus* CORY, List Birds W. I., revised ed., 1886, 11.

#### Genus CHLOROSPINGUS Cabanis.

*Chlorospingus*<sup>3</sup> CABANIS, Mus. Hein., i, May, 1851, 139. (Type, *C. leucophrys* Cabanis, = *Arremon ophthalmicus* Du Bus.)

Small, plainly colored Tanagers, with small and not obviously hooked nor toothed bill, the exposed culmen much less than two-thirds as long as tarsus; colors plain olive or olive-green above (the pileum and hind-neck sometimes gray, brown, or sooty), light-colored below, sometimes with yellow on throat or chest; sometimes with white markings on sides of head.

Bill much shorter than head, subconical, deeper than broad at base, where its width is decidedly less than length of gonys; exposed culmen about half as long as tarsus or a little more, slightly convex; gonys a little shorter than maxilla from nostril, less decidedly convex than culmen; maxillary tomium straight or faintly concave, slightly deflected basally; mandibular tomium straight, slightly deflected basally. Nostril exposed, small, longitudinally oval, with rather broad superior membrane. Rictal bristles minute, hardly obvious. Wing rather long (a little more than three to about three and one-third times as long as the rather long tarsus), rounded (eighth to fifth primaries longest, ninth shorter than fourth); primaries exceeding secondaries by less than length of middle toe with claw. Tail shorter than wing by less than half the length of the tarsus (*C. olivaceus* and *C. pileatus*) to nearly the length of the tarsus (*C. hypophæus*). Tarsus much longer than middle toe with claw; outer claw reaching about to base of middle claw, the inner slightly shorter; hind claw shorter than its digit—all the claws well curved, sharp.

<sup>1</sup> Five specimens.

<sup>2</sup> Two specimens.

<sup>3</sup> "Von *Χλωρός*, grünlich, und *επιγγος*, nom. prop."

*Coloration*.—Plain olive or olive-brown above, lighter olive, yellowish, or dull grayish below, with or without yellow on throat; pileum sometimes grayish or blackish, and sides of head sometimes with white postocular spot or superciliary stripe.

*Range*.—Southern Mexico to Bolivia, Peru, and western Ecuador.

I feel obliged to exclude from this genus the species ranged by Dr. Sclater, in the Catalogue of Birds in the British Museum (XI, p. 238), under his Section B. (= *Hemispingus* Cabanis), some of which, at least, including the type of *Hemispingus*, almost certainly belong to the Mniotiltidae.

KEY TO THE SPECIES OF CHLOROSPINGUS.

- a. Pileum gray, brown, or sooty black, very different from olive-green of back; chest and sides yellowish olive-green or olive-yellow.
- b. Malar region, chin, and throat white or buffy; chest yellowish olive, olive-yellow or buffy yellow; whitish of abdomen more extended.
- c. Postauricular region light gray or brown; pileum brown, grayish, or sooty; white postocular mark a spot beginning at upper eyelid and extending backward not farther than end of auricular region (usually not so far).
- d. Postauricular region (sides of neck) light gray; pileum gray.
  - e. Pileum and hindneck slate-gray, becoming dusky laterally; auricular region lighter gray. (Guatemala.) . . . *Chlorospingus olivaceus* (p. 159)
  - ee. Pileum and hindneck uniform dusky gray, the forehead and crown sometimes almost grayish black; auricular region darker gray. (Guatemala State of Chiapas, southern Mexico.) . . *Chlorospingus postocularis* (p. 160)
- dd. Postauricular region (sides of neck) brown; pileum brown.
  - e. Postocular white spot large, extending to end of auricular region; malar region white (sometimes tinged with buff posteriorly); chest pale yellowish olive.
  - f. Pileum darker or duller brown; back clearer olive-green; chest and



bb. Malar region black, or mostly so; chin and throat yellow flecked with black; whitish of abdomen more restricted. (Veragua.)

*Chlorospingus punctulatus* (p. 166)

aa. Pileum olive-green like back; chest and sides light grayish brown.

b. Throat gray; chest crossed by a band of olive-yellow. (Costa Rica.)

*Chlorospingus olivaceiceps* (p. 166)

bb. Throat dull yellow; chest light grayish brown or drab. (Veragua.)

*Chlorospingus hypophæus* (p. 167)

### CHLOROSPINGUS OLIVACEUS (Bonaparte).

#### OLIVACEUS CHLOROSPINGUS.

*Adults (sexes alike).*—Pileum and hindneck slate-gray, becoming blackish laterally, producing two rather broad but indistinct stripes; lores rather lighter gray; orbital region dusky, passing into dull grayish on auricular region; postauricular region (sides of neck) pale gray; a postocular (supra-auricular) spot of white, involving posterior half of upper eyelid; rest of upper parts plain, slightly brownish, olive-green; malar region, chin, and throat grayish white, sometimes slightly flecked with grayish; chest, sides, and flanks and under tail-coverts pale yellowish olive or olive-yellowish; breast and abdomen grayish white; bill black, the mandible sometimes more brownish; legs and feet light horn color (in dried skins).

*Young.*—Gray of head much tinged with olive-green, the white postocular spot tinged with yellow; olive-green of back, etc., browner; grayish white of throat and abdomen tinged with olive-yellow; otherwise like adults.<sup>1</sup>

*Adult male.*—Length (skin), 135.9; wing, 71.1–72.6 (71.9); tail, 58.9–59.4 (59.2); exposed culmen, 10.2–10.4; depth of bill at base, 5.3–6.4 (5.8); tarsus, 21.3; middle toe, 11.9–12.2.<sup>2</sup>

*Adult female.*—Length (skin), 134.6; wing, 66.3; tail, 60.2; exposed culmen, 9.7; tarsus, 21.1; middle toe, 10.9. (One specimen, from Tumbala, Chiapas.)

Highlands of Guatemala (Coban, San Gerónimo, Kamkhal, etc.), and Chiapas (Tumbala).

*Pooispiza olivacea* BONAPARTE, Consp. Av., i, July 15, 1850, 473 ("Brazil;" coll. Paris Mus.).

*Chlorospingus olivaceus* SCLATER, Tanagr. Cat. Specif., 1854, 6; Proc. Zool. Soc. Lond., 1856, 90 ("Central America"); Synop. Av. Tanagr., 1856, 28.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 315 (Coban, Kamkhal, and San Gerónimo, Guatemala).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 240.—NELSON, Auk, xv, 1898, 157 (Tumbala, Chiapas).

*Chlorospingus ophthalmicus* (not *Arremon ophthalmicus* Du Bus) SALVIN and SCLATER, Ibis, 1860, 32 (Coban, Vera Paz, Guatemala).—SCLATER, Cat. Am. Birds, 1862, 88, part (Coban).

<sup>1</sup> The specimen described is beginning to assume the adult plumage and therefore imperfectly represents the nestling plumage.

<sup>2</sup> Two specimens, from Tumbala, Chiapas; none of the Guatemalan specimens are sexed.

[*Chlorospingus*] *ophthalmicus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 2 part (Guatemala).

(*Chlorospingus ophthalmicus* BOUCARD, Liste Ois. Guat., 1878, 33.

**CHLOROSPINGUS POSTOCULARIS Cabanis.**

**DUSKY-HEADED CHLOROSPINGUS.**

Similar to *C. olivaceus*, but pileum much darker gray, the forehead and crown approaching sooty black.

*Adults (sexes alike).*—Pileum dusky gray or dull slate-blackish fading into dusky slate on hindneck, this into slate-gray on sides of neck; suborbital region and auricular region similar in color to pileum the lores rather grayer; a short white postocular streak, involving posterior half of upper eyelid and extending to about middle of auricular region; malar region, chin, and throat grayish white, sparsely and indistinctly flecked with dusky; chest, sides, flanks, and under tail coverts light yellowish olive or olive-yellow; bill black; legs and feet horn color in dried skins.

*Adult male.*—Length (skins), 130.8–141 (135.9); wing, 68.8–73. (71.1); tail, 56.9–63.5 (60.2); exposed culmen, 9.9–11.2 (10.4); depth of bill at base, 5.8; tarsus, 19.6–21.6 (20.6); middle toe, 12.7–13.1

*Adult female.* Length (skins), 142.2; wing, 67.8; tail, 60.2; exposed culmen, 10.7; depth of bill at base, 6.4; tarsus, 22.6; middle toe, 13.1 (One specimen, from Pinabete, Chiapas.)

Highlands of Guatemala (Duenas, Volcan de Agua, Volcan de Fuego, etc.) and Chiapas (Pinabete, Chicharras, etc.).

(*Chlorospingus postocularis* CABANIS, Journ. für Orn., xiv, May, 1866, 163 (Guatemala; coll. Berlin Mus.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, 1883, 314 (Volcan de Fuego, Guatemala, 3,000–8,000 ft.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 240 (Duenas, Volcan de Fuego, and Volcan

region; rest of upper parts clear olive-green; malar region, chin, throat, and upper chest dull white, the first usually more or less tinged with pale brownish buffy, the last sometimes shaded with pale grayish brown, the middle throat usually minutely though sparsely and faintly flecked with dusky, most distinct laterally, beneath lower margin of malar region; lower chest, sides, flanks, and under tail-coverts light yellowish olive-green; breast and abdomen grayish white or very pale gray; bill brownish black, the mandible sometimes more brownish basally; legs and feet horn color (in dried skin).

*Young*.—Similar to the young of *C. olivaceus*<sup>1</sup> but clearer (less brownish) olive-green above, with pileum lighter and more olivaceous; anterior portion of lores grayish white, tinged with olive-yellowish.

*Adult male*.—Length (skins), 129.5–135.9 (131.8); wing, 66.5–73.4 (70.9); tail, 56.6–61 (58.9); exposed culmen, 10.4–11.7 (10.9); depth of bill at base, 5.6–5.8 (5.6); tarsus, 20.3–21.3 (20.8); middle toe, 12.4–13.2 (12.7).<sup>2</sup>

*Adult female*.—Length (skins), 121.9–135.9 (128); wing, 65.5–68.1 (66.3); tail, 55.1–58.4 (56.1); exposed culmen, 10.7–10.9 (10.7); depth of bill at base, 5.3–5.8 (5.6); tarsus, 19.6–21.6 (20.6); middle toe, 11.9–12.7 (12.4).<sup>2</sup>

Southeastern Mexico, in States of Puebla (Huachinango), Vera Cruz (Jalapa; Mirador; Orizaba; Jico), and Oaxaca (Mount Zempoaltepec).

*Arremon ophthalmicus* Du Bus, Bull. Ac. Roy. Brux., xiv, pt. 2, 1847, 106 (Mexico; coll. Brussels Mus.).—LAFRESNAYE, Rev. Zool., 1848, 247 (Mexico; quotes Du Bus's descr.).

*[Arremon] ophthalmicus* GRAY, Gen. Birds, iii, 1849, App., p. 16.

*[Pipilopsis] ophthalmicus* BONAPARTE, Consp. Av., i, 1850, 485, part.

*Chlorospingus ophthalmicus* SCLATER, Proc. Zool. Soc. Lond., 1856, 89, part (monogr.), 302 (Jalapa and Cordova, Vera Cruz); 1859, 364 (Jalapa), 377 (Totontepec, Oaxaca); Synop. Av. Tanagr., 1856, 27; Cat. Am. Birds, 1862, 88, part (Jalapa and Orizaba, Vera Cruz); Cat. Birds Brit. Mus., xi, 1886, 238 (Orizaba; Jalapa; Valley of Mexico).—CABANIS, Journ. für Orn., 1866, 162 (Mexico).—SMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 549, part (hot and temperate regions of Vera Cruz, 2,000–3,700 ft.).—SALVIN, Cat. Strickland Coll., 1882, 196 (San Pedro, "Mexico").—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 314.—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 27 (Jalapa).

*[Chlorospingus] ophthalmicus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 24, part (Mexico).

*Chlorospingus leucophrys* CABANIS, Mus. Hein., i, May, 1851, 139 (Jalapa, Vera Cruz; coll. Berlin Mus.; ex *Tanagra leucophrys* Lichtenstein, manuscript).

*[Pipilopsis] albitemporalis* (not *Tachyphonus albitempora* Lafresnaye) BONAPARTE, Consp. Av., i, 1850, 485, part.

*Chlorospingus albitemporalis* SCLATER, Cat. Am. Birds, 1862, 89, part (Mexico).

*Chlorospingus olivaceus* (not *Poospiza olivacea* Bonaparte) FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 140 (Jalapa, Vera Cruz).

<sup>1</sup> The young of *C. albitempora* not seen by me.

<sup>2</sup> Five specimens.

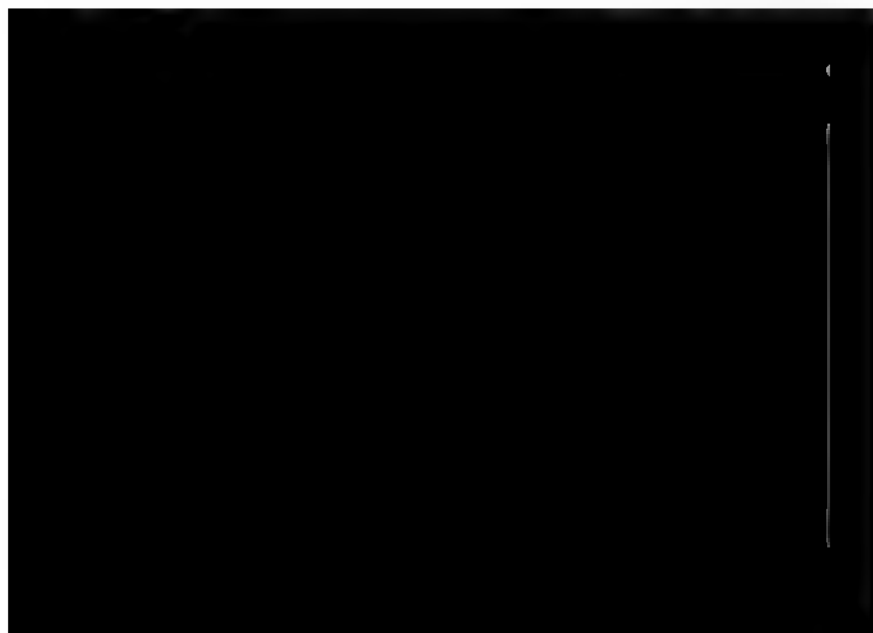
## CHLOROSPINGUS SUMICHRASTI Ridgway.

## SUMICHRAST'S CHLOROSPINGUS.

Similar to *C. ophthalmicus*, but much browner above (the pile even slightly browner than in *C. albitemporalis*); throat distinct flecked with dusky; yellowish olive-green of chest, etc., paler and duller; upper chest pale buffy grayish brown.

*Adult male.*—Pileum and hindneck plain sepia brown, the sides of neck paler, more hair brown; posterior portion of lores and orbital region very dark sooty brown, passing into deep sepia brown on auricular region; a large, white, elongated postocular spot, involving whole of upper and posterior half of lower eyelid; anterior portion of lores dull white, continued narrowly and brokenly across anterior portion of forehead; rest of upper parts plain greenish olive (much browner than in *C. ophthalmicus*); malar region, chin, and throat dull white, the first and last tinged with pale brownish buff posteriorly, the buffy tint of lower throat passing into a pale buffy grayish brown tint on upper chest; middle and lower throat distinct flecked with dusky, the flecks largest and most numerous lateral below lower margin of malar region; chest, sides, flanks, and under tail-coverts light yellowish olive, the first paler and tinged with pale buffy brownish; breast and abdomen very pale gray, almost white at center of abdomen; bill blackish; legs and feet horn color (in dried skins); length (skins), 133.4; wing, 66.5; tail, 56.4; depth of bill at base, 5.3; tarsus, 20.8; middle toe, 11.7.<sup>4</sup>

State of Vera Cruz, southeastern Mexico (Mount Azul, near Orizaba).



of lores (meeting narrowly across anterior part of forehead), upper eyelid and angular postocular spot (the two connected) white, the last with posterior extremity pointed; posterior portion of lores and sub-orbital region dark brown or blackish brown, passing gradually into broccoli brown on posterior portion of auricular region; rest of upper parts clear bright olive-green; malar region, chin, and throat buff, the posterior portion of the first streaked with blackish brown; chest dull yellow, strongly tinged with buff laterally and anteriorly; sides and flanks yellowish olive-green, the under tail-coverts similar but paler and more yellowish; breast (medially) and abdomen pale gray; bill black, the mandible pale brownish (in dried skin) at gonydeal angle; legs and feet dusky horn-color (in dried skin); length (skin), 146.1; wing, 68.3; tail, 60.7; exposed culmen, 9.9; depth of bill at base, 6.1; tarsus, 20.8; middle toe, 12.4.<sup>1</sup>

Southwestern Mexico, in State of Guerrero (Omiteme, Sierra Madre del Sur, altitude 8,000 feet; mountains near Chilpancingo).

(*Chlorospingus albifrons* SALVIN and GODMAN, Ibis, 6th ser., i, Apr., 1889, 237 (Omiteme, "in Sierra Madre del Sur, Mexico," alt. 8,000 ft.; coll. Salvin and Godman).

#### CHLOROSPINGUS ALBITEMPORA (Lafresnaye).

##### CARMIOL'S CHLOROSPINGUS.

*Adults (sexes alike).*—Pileum, hindneck, and sides of head and neck (except malar region) plain sepia brown, varying to grayish brown or dark sooty brown, paler on the neck, sometimes considerably darker immediately beneath eyes; a postocular spot of white, involving about the posterior half of upper eyelid, and terminating posteriorly about halfway between posterior angle of eye and extremity of auricular region or nearer to the former than to the latter; rest of upper parts plain olive-green; malar region pale brown or brownish buffy, flecked with sepia brown; chin and throat dull buffy white or brownish white, the middle throat more or less flecked with sepia; chest, sides, flanks, and under tail-coverts bright olive-yellow (sometimes tinged with orange-buffy on upper chest), the sides and flanks rather more yellowish olive-green; breast and abdomen white; under wing-coverts and axillars white tinged with light yellow; bill brownish black, the mandible usually somewhat more brownish; iris brown,<sup>2</sup> legs and feet horn color (in dried skins).

*Adult male.*—Length (skins), 132.1–139.7 (136.4); wing, 67.3–71.1 (69.3); tail, 56.4–60.5 (58.4); exposed culmen, 10.4–12.2 (11.2); depth

<sup>1</sup> No. 143615, U. S. Nat. Mus. (No. 2454, U. S. Biol. Surv.), Chilpancingo, Guerrero, December 24, 1894; Nelson and Goldman. The adult male no doubt quite similar in plumage, but probably slightly larger.

<sup>2</sup> Carmiol, manuscript.

of bill at base, 6.4-6.6; tarsus, 21.6-22.4 (22.1); middle toe, 12.7-13.7 (13.2).<sup>1</sup>

*Adult female*.—Length (skins), 132.1-134.6 (133.4); wing, 64.3-64.8 (64.5); tail, 52.1-57.2 (54.6); exposed culmen, 10.9-12.2 (11.4); depth of bill at base, 6.1-6.4; tarsus, 22.4-22.6; middle toe, 12.4-12.7.<sup>2</sup>

Costa Rica (Navarro; Dota; Barranca; San José; Turrialba; San Mateo; Volcan de Cartago; Volcan de Irazú; Rio Sucio<sup>3</sup>) and Chiriqui (Boquete; Volcan de Chiriqui); said also to inhabit Colombia, Venezuela, Ecuador, and Bolivia.<sup>4</sup>

*Tachyphonus albitemporus* LAFRESNAYE, Rev. Zool., Jan., 1848, 12 (Colombia; coll. Lafresnaye).<sup>5</sup>

*Tachyphonus albitemporus* GRAY, Gen. Birds, iii, 1849, App., p. 17.—BONAPARTE, Consp. Av., i, 1850, 237.

*Chlorospingus albitemporus* SALVIN, Cat. Strickland Coll., 1882, 196 (Brazil?).—ALLEN, Bull. Am. Mus. N. H., ii, Mar., 1889, 82 (Bolivia).

*Chlorospingus albitemporalis* SCLATER, Proc. Zool. Soc. Lond., 1855, 155 (Bogota, Colombia); 1856, 89, part (monogr.; Bogota; Bolivia); 1858, 293 (c. Peru or Bolivia, crit.); Synop. Av. Tanagr., 1856, 28; Cat. Am. Birds, 1862, 80, part (Chillanes, Ecuador; Bolivia); Cat. Birds Brit. Mus., xi, 1886, 239, part (Volcan de Cartago and Irazú distr., Costa Rica; Volcan de Chiriqui; Tilonito, prov. Yungas, Sorato, and Nairapi, Bolivia).—CAMEN, Proc. Ac. Nat. Sci. Phila., 1865, 171 (San José, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 101 (San José, Turrialba, Barranca, Dota, and San Mateo, Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 188 (Volcan de Chiriqui).—WYATT, Ibis, 1871, 327 (Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 627, 630 (Cumbre de Valencia, Venezuela; crit.); 1879, 602 (Bolivia).—BOCARD, Proc. Zool. Soc. Lond., 1878, 53 (La

<sup>1</sup> Four specimens; three from Costa Rica, one from Chiriqui.

<sup>2</sup> Two specimens, from Costa Rica.

<sup>3</sup> Two specimens in the National Museum collection from Rio Sucio are different

Laguna, Naranjo, and Navarro, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 315. —BERLEPSCH, Journ. für. Orn., 1884, 293 (Bucaramanga, Colombia: crit.).—TACZANOWSKI, Orn. du Pérou, ii, 1885, 513. ZELEDON, Ann. Mus. Nac. Costa Rica, i, 1887, 110 (La Palma de San José and Naranjo de Cartago, Costa Rica).—SALVADORI, Boll. Mus. Zool., etc., Torino, xii, 1897, 6 (San Lorenzo, Argentina).

[*Chlorospingus*] *albitemporalis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 24, part

[*Chlorospingus*] *ophthalmicus* (not *Accemon ophthalmicus* DU BUS) CABANIS, Mus. Hein., i, 1851, 139, footnote (Colombia).

[*Pipiloopsis*] *ophthalmicus* BONAPARTE, Consp. Av., i, 1850, 485, part (Colombia).

### CHLOROSPINGUS PILEATUS Salvin.

#### SOOTY-CAPPED CHLOROSPINGUS.

*Adults (sexes alike).*—Pileum, hindneck, sides of neck, auricular region, suborbital region, and lores dark sooty slate-color or very dark sooty brown; a conspicuous broad white stripe beginning above eye (but separated from it by a narrow space of dusky) and extending backward to sides of hindneck; rest of upper parts plain olive-green; malar region, chin, and throat white, or grayish white, the lower margin of the former marked with a dusky streak, the adjacent portion of the throat faintly flecked with dusky; rest of under parts light yellowish olive-green or olive-yellowish, the median portion of breast and abdomen grayish white; bill black; legs and feet horn color (in dried skin).

*Adult male.*—Length (skins), 133–143 (138); wing, 67–72 (69.6); tail, 58–63.5 (61.1); exposed culmen, 11.5–12 (11.9); depth of bill at base, 6–6.5 (6.2); tarsus, 22–23.5 (22.7); middle toe, 13–13.5 (13.3).<sup>1</sup>

*Adult female.*—Length (skins), 130–139 (135); wing, 62.5–72.5 (67.4); tail, 56–64 (59.7); exposed culmen, 11.5–12 (11.8); depth of bill at base, 6.5; tarsus, 22–23.5 (22.5); middle toe, 12.5–13 (12.7).<sup>2</sup>

*Young.*—Head as in adults, but the dusky or white stripe on sides of occiput and nape less sharply defined; back, etc., much duller and more grayish; under parts mostly pale grayish, the sides of the breast light olive-green, the throat very light grayish, and absolutely streaked laterally; bill black; legs and feet more grayish; outer margins of tail-feathers (in dried skins), and median portion of breast and abdomen more grayish.

Highlands of Costa Rica, San Lorenzo, San Juan de los Rios, Chiriquí, etc.

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N. Y.,  
MAN, Biol.

Centr.-Am., Aves, i, 1883, 316, pl. 22, fig. 2 (Irazú, Poás, and Rancho Redondo, Costa Rica; Volcan de Chiriquí).—RIDGWAY, Proc. U. S. Nat. Mus., vi, 1884, 412 (Pirris, Costa Rica; descr. young, etc.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 241.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 531 (Volcan de Irazú and Volcan de Poás, Costa Rica; descr. young).

[*Chlorospingus*] *pileatus* SCLATER and SALVIN, Nomin. Av. Neotr., 1873, 24.

**CHLOROSPINGUS PUNCTULATUS** Sclater and Salvin.

**YELLOW-BREASTED CHLOROSPINGUS.**

*Adults (sexes alike).*—Head, except throat, very dark sooty brown, inclining to brownish black on pileum, the hindneck and sides of neck similar but paler and tinged with brownish olive; an elongated white postocular spot, involving posterior half or less of upper eyelid; rest of upper parts yellowish olive-green; chin and throat yellow (the former much paler and duller), thickly flecked with blackish brown or dusky; abdomen white or dull yellowish white; rest of under parts grading from bright wax yellow or dull saffron yellow on upper chest to lighter and clearer yellow on lower chest, and into yellowish olive-green or deep olive-yellow on sides, flanks, and under tail-coverts; maxilla black, mandible more brownish; legs and feet horn color (in dried skins).

*Adult (male?).*—Wing, 64; tail, 54.1; exposed culmen, 12.7; depth of bill at base, 6.9; tarsus, 22.9; middle toe, 13.5.<sup>1</sup>

*Adult female.* Wing, 63.5; tail, 53.3; exposed culmen, 12.2; tarsus, 22.4; middle toe, 12.7.<sup>2</sup>

Veragua (Cordillera del Chucu) and Panama (Cascajal).

*Chlorospingus punctulatus* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1869, 440 (Cordillera del Chucu, Veragua; coll. Salvin and Godman).—SALVIN, Proc. Zool. Soc. Lond., 1870, 188 (Cordillera del Chucu).—SALVIN and GODMAN, Proc. Zool. Soc. Lond., 1871, 188 (Cordillera del Chucu).





## CHLOROSPINGUS HYPOPHÆUS Sclater and Salvin

## DRAB-BREASTED CHLOROSPINGUS.

*Adults (sexes alike).*—Above, including pileum, hindneck, sides of neck, and auricular region, plain olive-green; lores, suborbital region, and malar region pale gray; chin very pale grayish buffy; throat, dull yellow (light ocher yellow or wax yellow); chest, sides, and flanks pale grayish brown, the first tinged with buffy; under tail-coverts light olive, margined with paler and slightly tinged with pale yellowish; rest of under parts pale gray, becoming white on lower abdomen and anal region; maxilla dusky, mandible pale horn color (in dried skins) with tip more dusky; legs and feet light horn color (in dried skins).

*Adult male.*—Length (skins), 130–133 (131); wing, 74.4–80 (77.1); tail, 50–55.4 (53.1); exposed culmen, 12–13 (12.6) depth of bill at base, 7–7.1; tarsus, 21–22.9 (21.6); middle toe, 13–15 (14).<sup>1</sup>

*Adult female.*—Length (skins), 136–141 (138); wing, 78.5–81.5 (80); tail, 55–59 (57); exposed culmen, 12–12.5 (12.2); depth of bill at base, 7–7.1; tarsus, 21–22.9 (21.6); middle toe, 13–15 (14).<sup>2</sup>

Veragua (Calovevora; Chitra; Boquete de Chitra).

*Chlorospingus hypophæus* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 389 (Calovevora, Veragua; coll. Salvin and Godman).—SALVIN, Proc. Zool. Soc. Lond., 1870, 188 (Calovevora, Chitra, and Boquete de Chitra, Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 317, pl. 22, fig. 3.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 243.

[*Chlorospingus*] *hypophæus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 24.

## Genus MITROSPINGUS Ridgway.

*Mitrospingus* RIDGWAY, Auk, xv, no. 3, July, 1898, 225. (Type, *Tachyphonus cassinii* Lawrence.)

Nearest to *Eucometis*, but bill much longer (nearly as long as head), nostril very different, wing more rounded, tarsi relatively longer, claws stronger, occipital feathers very short (instead of the reverse), and style of coloration very different.

Exposed culmen three-fourths as long as tarsus, or more, gently convex except terminally, where strongly decurved; gonys decidedly shorter than length of maxilla from nostril, nearly straight; maxillary tomium slightly concave, decidedly but gradually deflected basally; slightly notched subterminally; mandibular tomium nearly straight to near base where gently deflected; depth of bill at base decidedly less than half the length of exposed culmen, not much greater than basal width. Nostril exposed, narrow, longitudinal, with very broad superior membrane. Rictal bristles not obvious. Wing moderate (about

<sup>1</sup> Four specimens, two from Chiriqui, two from Veragua; one of the latter not sexed, but, being the larger of the two, doubtless a male.

<sup>2</sup> Two specimens, from Volcan de Chiriqui (Caribbean slope).

three and one-third times as long as tarsus), much rounded (seventh to fifth primaries longest, ninth shorter than secondaries); primaries exceeding secondaries by a little more than half the length of exposed culmen. Tail nearly as long as wing, rounded, the rectrices moderately broad, with rather pointed tips. Tarsus a little longer than middle toe with claw; lateral claws reaching about to base of middle claw; hind claw shorter than its digit. Occipital feathers very short.

*Coloration*.—Above plain dark grayish brown, beneath, together with a shield-shaped patch covering crown and occiput, yellowish olive; rest of head black, paling into grayish on throat.

*Range*.—Costa Rica to western Ecuador. (Monotypic.)

#### MITROSPINGUS CASSINI (Lawrence).

##### CASSIN'S TANAGER.

*Adults (sexes alike)*.—Occiput and median part of crown yellowish olive-green, forming a triangular patch (with apex on anterior portion of crown); forehead, lores, superciliary region, auricular region, part of malar region, and chin grayish black; throat gray, sometimes tinged with brownish; hindneck, back, scapulars, rump, upper tail-coverts and lesser wing-coverts deep grayish olive, the hindneck more grayish, the back and upper tail-coverts slightly tinged with olive-green; wings and tail similar but slightly more brownish; under parts of body bright yellowish olive-green, brightest or most yellowish on chest, duller and more olive on sides and flanks; under tail-coverts russet-olive, more or less tinged with tawny; under wing-coverts and axillars light brownish gray; maxilla brownish black or blackish brown with paler tomium; mandible wholly light colored; iris brown; legs and feet brownish yellowish brown.

at base, 7.9–8.4 (8.1); tarsus, 23.6–27.2 (25.1); middle toe, 16–17.5 (16.5).<sup>1</sup>

Costa Rica (Angostura; Jiménez) and southward through western Colombia to western Ecuador (Guayaquil).

*Tachyphonus*, sp., CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 142 (Rio Truando, n. Colombia).

*Tachyphonus cassinii* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.; coll. G. N. Lawrence); ix, 1868, 101 (Angostura, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 299 (Costa Rica).

*Eucometis cassinii* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 351, pl. 30 (Lion Hill).—SALVIN, Proc. Zool. Soc. Lond., 1867, 139 (Santiago, Veragua).

*Eucometis cassini* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 503 (Nèche, prov. Antioquia, Colombia).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 307.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 219.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 110 (Costa Rica).—RIDGWAY, Proc. U. S. Nat. Mus., xiv, 1891, 473 (Jiménez, Costa Rica; descr. young).

[*Eucometis*] *cassini* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 23.

*Mitrospingus cassini* BANGS, Proc. New Engl. Zool. Club, ii, 1900, 29 (Loma del Leon, Panama R. R.).

## Family ICTERIDÆ.

### THE TROUPIALS.<sup>2</sup>

Nine-primaried, conirostral, acutiplantar Oscines without obvious rictal bristles.<sup>3</sup>

Bill very variable as to relative length and thickness, but never conspicuously longer than the head and always more or less conical and acute; usually with nearly straight outlines, but sometimes with the tip rather strongly, but never (except in some *Quiscalis*) abruptly, decurved; its depth at base never equal to distance from nostril to tip of maxilla, and the gonys always more or less shorter than the same measurement; culmen usually more or less elevated basally, sometimes expanded or swollen into a conspicuous "frontal shield" or

<sup>1</sup>Three specimens, all from Isthmus of Panama. An adult female from Guayaquil is smaller than any of the Panama specimens, measuring as follows: Wing, 83.6; tail, 71.9; exposed culmen, 17.3; depth of bill at base, 8.1; tarsus, 26.2; middle toe, 16.8. I can detect no differences in coloration.

<sup>2</sup>A satisfactory vernacular name for this family has hitherto been wanting. The group has been known by the name of Hang-nests, but only species of certain genera build pensile nests; as the American Orioles or American Starlings, on account of superficial resemblance of only a very small percentage of its members to the Old World Orioles (Oriolidae) and Starlings (Sturnidae). Other names which have been used, either for the group as a whole or for particular genera, as Grackle, Crow Blackbird, etc., are equally nondistinctive or of limited pertinence. The name Troupial, which is here adopted, has more general applicability than any other term, with possibly the exception of Cacique, but it seems best to restrict the latter to the group to which it specially belongs.

<sup>3</sup>These are faintly developed, however, in the oropendolas and caciques (genera *Ocyalus*, *Clypicterus*, *Zarhynchus*, *Gymnostinops*, *Cucicus*, etc.).

"casque," or if not so developed the mesorhinium often distinctly flattened, with its edges sharply defined. Commissure strongly and usually abruptly deflexed for the basal portion, the maxillary tomium never notched near tip. Nostrils never concealed, though sometimes (as in the genus *Molothrus*) the feathering of the loreal antix extends beneath them and covers the membrane immediately behind them; sometimes (in the oropendolas and caciques) bored directly into the horny rhinotheca, but usually situated in a more or less well-defined nasal fossa and overhung by a more or less distinct (sometimes prominent and corneous) membrane or operculum. Rictal bristles altogether obsolete or (in oropendolas and caciques) very faintly developed. Wing very variable; usually with the tip moderately produced and subtruncate, in one genus (*Cassidix*) long (several times exceeding length of culmen) and the outermost (ninth) primary longest—in another (*Amblycercus*) the longest primaries scarcely extending beyond the secondaries and the outermost (ninth) primary shorter than the innermost (first); tertials produced beyond secondaries only in some terrestrial genera (*Sturnella*, *Trupialis*, *Leistes*, and *Dolichonyx*); outer webs of two to five (eighth to seventh or fourth) primaries sinuated; inner webs very variable, often not obviously sinuated, usually slightly so, sometimes (in *Holquiscalus* and *Callothrux*) the middle portion expanded (toothed in *Callothrux*); longer primaries sometimes (as in *Zarhynchus*) attenuated terminally. Tail variable as to relative length, form of tip, and shape of rectrices; always more than half as long as wing, never conspicuously longer than wing, never forked nor emarginate, usually more or less rounded, sometimes double-rounded, occasionally (in *Quiscalis*) graduated and plicate; usually the rectrices (always twelve in number) are of nearly equal width throughout, but sometimes (in *Quiscalis*

decidedly so; equal to or slightly exceeding in length the combined length of basal and middle phalanges of middle toe.

The absence of obvious rictal bristles is the only external character that I am able to discover which will serve to distinguish the Icteridæ, as a group, from the Fringillidæ. It is true that none of the Icteridæ have the bill notched (i. e., the maxillary tomium notched subterminally), but neither do many genera of Fringillidæ. With the latter group the Icteridæ agree in the following characters:

(1) The strongly deflexed or angulated rictal portion of the commissure (not always found in Fringillidæ, however).

(2) The abortion of the first primary.

(3) The complete, or nearly complete, separation of the basal phalanx of the middle toe from that of the inner toe (being united to the outer toe by about half the length of the basal phalanx, as in Corvidæ and other groups).

(4) In having the planta tarsi closely joined along their anterior edge to the acrotarsium, and with only the extreme lower portion divided.

In both groups the inner plate of the planta tarsi is depressed conspicuously below the level of the acrotarsium, the posterior margin of which stands out as a prominent ridge (more conspicuously so than in most Corvidæ), and those of opposite sides are in close contact along their posterior margin, forming a sharp posterior edge to the tarsus. In both groups the proportionate length of the toes themselves and the relative development and curvature of the claws varies considerably and to about the same extent.

From the Sturnidæ and the Ploceidæ, which are undoubtedly, next to the Fringillidæ, the most nearly allied groups, the Icteridæ may be distinguished by the complete abortion of the first primary, both of those groups being "ten-primaried."

From the Corvidæ, the Icteridæ may be distinguished by more numerous characters, among which may be mentioned (1) the possession of only nine obvious primaries; (2) the absence of obvious rictal bristles, and (3) the undivided lower portion of the planta tarsi.

Although so nearly allied to the Fringillidæ that only a single external character seems available for its diagnosis, the Icteridæ nevertheless constitute a well-circumscribed group, there being not a single genus whose proper reference to it can be seriously questioned. At the same time it is a group presenting most extreme types of telcological development or adaptive modification, the strictly arboreal oropendolas and caciques (genera *Gymnostinops*, *Zarhynchus*, *Clypipterus*, *Cacicus*, etc.) representing one extreme and the terrestrial meadowlarks (*Sturnella*, *Trupialis*, and *Leistes*) the other, peculiar specializations being manifested in the boat-tailed *Quiscalus* and spiny-tailed *Dolichonyx*. With its limited representation in North America it would

not be difficult to divide the group into several sharply circumscribed and easily characterized lesser groups; this has been attempted for the family as a whole, and the "subfamilies" Cassicinae, Agelaiinae, Sturnellinae, Icterinae, and Quiscalinae have long been adopted, even by the latest authority.<sup>1</sup> A careful comparison of all the forms, however, will soon convince one that such a subdivision can not be maintained, the different supposed groups running into one another so gradually that any subdivision of the family is most likely to be more or less arbitrary. So far as I am able to discover, only two genera stand out prominently from all the rest, these being *Sturnella* and *Dolichonyx*; yet each of these is obviously related to other genera—*Sturnella* to *Trupialis*, and this, through *Leistes*, obviously leading to the Agelaiine type, the latter through *Icterus* to *Coccyus*, and this in turn to the opposite extreme from *Sturnella*, the larger caciues or oropendolas (*Gymnostinops*, *Zarhynchus*, etc.). The two "lateral off-shoots" represented by *Dolichonyx* and the typical *Quiscali* (genera *Quiscalus*, *Holoquiscalus*, and *Megaquiscalus*) are both obviously connected with the more generalized types, though *Dolichonyx* evidently shows points of relationship to the Sturnelline end of the series.

The following arrangement of the genera is far from satisfactory to the author, but is the best he has been able to make without a far greater amount of time than is at his disposal, together with a careful study of internal characters, not now practicable on account of absence of the necessary material. While not entirely natural, the key has been prepared to show as nearly as can be in a linear arrangement, what appears to be the most natural sequence of the genera, without obscuring the characters which serve to most readily identify them.

The Icteridae comprise birds of most various habits. Some are

are parasitic, like the European cuckoo, always laying their eggs in the nests of other birds. The plumage varies from uniform black (sometimes with brilliant metallic gloss) or somber brown to the most showy combinations of yellow, orange, or scarlet, and black.

The group is peculiar to America and is essentially Neotropical. Nearly one hundred and fifty species are known, belonging to more than thirty genera, of which by far the larger number are represented only in South America.

## KEY TO THE GENERA OF ICTERIDÆ.

- a. Three to five primaries (the eighth to sixth or fourth inclusive) with outer webs sinuated; rectrices not acuminate; wing-tip less than twice as long as culmen (or else mesorhinium very broad, one-fourth as wide as length of culmen); middle toe with claw little if any longer than tarsus (or else tarsi very stout and plumage entirely black), usually shorter; middle toe with claw shorter than its terminal phalanx; hallux with its claw shorter than the digit.
- b. Nostrils without superior membrane or operculum, or if with the latter the operculum completely coalesced with the mesorhinium.
- c. Nostrils bored directly into the rhinotheca, the nasal fossæ completely obliterated; neck without ruff. (*Cacici*.)
- d. Middle pair of rectrices decidedly shorter than the next pair and different in color from outer rectrices; rump neither scarlet, orange-red, nor yellow, and if black the tail partly yellow; nostrils much below lateral median line of maxilla. ("Oropendolas.")
- e. Frontal shield very broad, its width decidedly greater than distance from nostril to tip of maxilla ..... **Zarhynchus** (p. 175)
- ee. Frontal shield narrow, its width decidedly less than half the distance from nostril to tip of maxilla.
- f. Cheeks and sides of throat naked; wing-tip short, less than length of culmen ..... **Gymnostinops** (p. 178)
- ff. Whole head normally feathered; wing-tip long, much exceeding length of culmen ..... **Ostinops** (p. 183)
- dd. Middle pair of rectrices not shorter than next pair, or else the tail unicolorous (black); rump scarlet, orange-red, or yellow, or else whole plumage black; nostrils not conspicuously below lateral median line of maxilla. ("Caciques.")
- e. Particolored (black, with patches of scarlet, orange-red, or yellow); wing more pointed, the outermost (ninth) primary not shorter than innermost (first)—usually much longer.
- f. Not conspicuously, if at all, crested; ninth primary shorter than fifth. **Cacicus** (p. 186)
- ff. Conspicuously crested; ninth primary longer than fifth ..... **Cassidix** (p. 196)
- ee. Unicolorous (black); wing more rounded, the ninth primary shorter than first ..... **Amblycercus** (p. 192)
- cc. Nostrils in anterior end of well-defined nasal fossæ, but the latter otherwise completely filled by feathering of the loreal antæ; neck ruffed. (*Cassidices*.) **Cassidix** (p. 196)
- bb. Nostrils with more or less distinct superior operculum or membrane.
- c. Hallux not longer than lateral anterior toes; middle phalanx of middle toe shorter than terminal phalanx; outer toe (without claw) reaching to or beyond second (subterminal) joint of middle toe.

- d. Longest tertials not produced beyond secondaries; outer toe (without claw) reaching beyond subterminal joint of middle toe.
- e. Nostril small, roundish, much encroached upon beneath by feathering of the loreal antise; parasitic. (*Molothri*.)
  - f. Neck ruffed laterally and behind (as in *Cassidix*); inner webs of three outer primaries abruptly emarginated and angularly toothed; plumage of neck, breast, etc., peculiar (hair-like).....*Gallothrux* (p. 200)
  - ff. Neck not ruffed; inner webs of primaries only slightly sinuated, plumage of neck, breast, etc., normal (blended).....*Molothrus* (p. 205)
- ee. Nostril larger, narrower, more or less linear, oblong, or subcuneate, well forward of the loreal antise; nonparasitic.
  - f. Culmen more or less strongly and abruptly decurved terminally, or else (1) bill stout and obtuse and ninth primary shorter than second, or (2) culmen less than one-fifth as long as tail, the latter longer than wing and much graduated. (*Quiscalus*.)
- g. Ninth primary not shorter than third, usually longer.
  - h. Tail plicate<sup>1</sup> and graduated (distance between tips of lateral and middle rectrices greater, usually much more, than distance from nostril to tip of maxilla).
    - i. Median palatal ridge truncated, angulated, and highest anteriorly.....*Quiscalus* (p. 212)
    - ii. Median palatal ridge beveled anteriorly, highest in middle.
      - j. Graduation of tail less than one-third (about one-fourth) its length; tail much shorter than wing....*Holoquiscalus* (p. 222)
      - jj. Graduation of tail more than one-third its length; tail nearly as long as wing (sometimes longer) ..*Megaquiscalus* (p. 233)
  - hh. Tail not plicate, slightly rounded or nearly even, the difference between tips of lateral and middle rectrices less than distance from nostril to tip of maxilla.
    - i. Ninth primary equal to sixth or longer; plumage of neck and chest normal (smooth); bill more slender, its depth at base decidedly less than length of gonys.....*Scelopophagus* (p. 244)
    - ii. Ninth primary shorter than sixth (equal to fifth); plumage of



- i. Length of culmen much less than difference between length of wing and length of tail.....**Agelaius** (p. 319)
- ii. Length of culmen much greater than difference between length of wing and length of tail.....**Nesopsar** (p. 344)
- hh. Ninth primary longest or equal to longest; lateral claws reaching beyond base of middle claw.....**Xanthocephalus** (p. 346)
- dd. Longest tertials produced beyond tips of adjacent secondaries; outer toe (without claw) not reaching beyond subterminal joint of middle toe. (*Trupiales*.) .....**Leistes** (p. 350)
- cc. Hallux much longer than lateral anterior toes; middle phalanx of middle toe longer than terminal phalanx; outer toe (without claw) not reaching to second (subterminal) joint of middle toe. (*Sturnella*.) **Sturnella** (p. 353)
- aa. Only two primaries (the eighth and seventh) with outer web sinuated; rectrices conspicuously acuminate; wing-tip more than twice as long as culmen; middle toe, with claw, much longer than tarsus; claw of middle toe longer than the terminal phalanx; hallux with its claw longer than the digit. (*Dolichonyces*.) .....**Dolichonyx** (p. 369)

### Genus ZARHYNCHUS Oberholser.

*Eucorystes*<sup>1</sup> (not of Bell, 1862) SCLATER, Ibis, 5th ser., i, Apr., 1883, 147. (Type, *Cacicus wagleri* (Gray).)

*Zarhynchus*<sup>2</sup> OBERHOLSER, Proc. Acad. Nat. Sci. Phila., June 2, 1899, 215. (For *Eucorystes*, preoccupied.)

Large arboreal Icteridæ with the bill much longer than the head, much swollen basally, forming a broad rounded frontal shield; the primaries long and attenuated terminally; coloration glossy black and dark chestnut, the tail mostly yellow.

Bill much longer than head, elongate-conical, declinate, acute, much swollen basally, its depth at base decidedly less than half the length of culmen, decidedly less than length of gonys, its basal width about one-third the length of culmen, or a little less; culmen straight or nearly so in middle portion, gently decurved terminally, more or less arched and sometimes slightly elevated basally where broadly expanded, forming a rounded frontal shield, the posterior end of which reaches as far backward as middle of eye, its greatest width equal to about half the distance from nostril to tip of maxilla; gonys nearly straight, decidedly shorter than distance from nostril to tip of maxilla; mandibular ramus much widened and swollen posteriorly, the posterior outline oblique, slightly convex; commissure nearly straight, but slightly decurved both basally and terminally. Nostrils situated much below the lateral median line of the maxilla, small, broadly oval or roundish, bored into the horny rhinotheca, beveled off anteriorly, and separated distinctly from the loreal feathering. Wing long (about three and one-third times length of culmen), with long and pointed tip (much longer than culmen); outermost (ninth) primary intermediate between fifth and fourth, the seventh, or seventh and sixth, longest; four outer primaries

<sup>1</sup>"Εὐ, benè, et κορυστῆς, galeatus."

<sup>2</sup>From ζα, valde, and ῥύγχος, rostrum.

attenuated terminally, especially the outermost, which is abruptly emarginated on inner web. Tail about two-thirds as long as wing, rounded or slightly graduated, with the middle pair of rectrices abruptly shorter than the next (intermediate between second and third from outside), the rectrices contracted terminally and obtusely pointed. Tarsus nearly as long as maxilla from nostril, stout, the upper portion covered by projecting tibial feathers, the anterior scutella very distinct; middle toe, with claw, nearly as long as tarsus; outer toe with claw reaching a little beyond base of middle claw, the inner slightly shorter; hallux decidedly shorter than lateral toes but much stouter, its claw decidedly shorter than the digit. A sparse crest of very narrow elongated feathers springing from middle of crown.

*Coloration.*—Back, scapulars, wings, middle pair of rectrices, breast, abdomen, and thighs black, more or less glossy; tail (except middle pair of rectrices) yellow; rest of plumage dark chestnut; bill light colored.

*Range.*—Southern Mexico to Venezuela and northwestern Peru. (Monotypic.)

ZARHYNCHUS WAGLERI WAGLERI (Gray).

WAGLER'S OROPEKOLA.

*Adult male.*—Head, neck, and upper chest dark chestnut-brown or seal brown, somewhat darker on the crown and slender crest-feathers, the plumage pure white basally; back, scapulars, and wing-coverts black, the feathers broadly margined with glossy greenish black (more narrowly on the greater coverts); rest of wings, together with upper chest, breast, and upper abdomen uniform black, more or less strongly glossed with bluish green; flanks, rump, and upper tail coverts dark

culmen, 48.3–53.3 (51.3); depth of bill at base, 22.6–23.9 (23.1); width of frontal shield, 15.2–16.5 (15.7); tarsus, 31.5–33.3 (32.8); middle toe, 23.1–25.4 (23.6).<sup>1</sup>

*Young*.—Similar to adult female, but colors duller and bill light brownish.

Nicaragua (Chontales; Rio Escondido) to Colombia (Pocune; Nercua; Rio Truando); Venezuela; western Ecuador (Balzar Mountains; Foreste del Rio Peripa)?; northwestern Peru (Piura)?<sup>2</sup>

*C[acicus] wagleri* GRAY, Gen. Birds, ii, 1847, 342 (neither type locality nor location of type given).<sup>3</sup>

*Cacicus wagleri* GRAY, Gen. Birds, ii, 1847, pl. 84.

[*Ocyalus*] *wagleri* BONAPARTE, Consp. Av., i, 1850, 427 (Venezuela).—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 35, part.

*Ocyalus wagleri* SCLATER, Proc. Zool. Soc. Lond., 1855, 153 (Bogota).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 138 (Rio Truando and Rio Nercua, n. Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 353 (Panama R. R.); 1879, 508, pl. 43, fig. 3 (near Remedios, prov. Antioquia, Colombia).—CABANIS, Journ. für Orn., 1861, 9 (Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (Santa Fé, Veragua); 1870, 190 (Chitra and Calobre, Veragua); Ibis, 1872, 317 (Chontales, Nicaragua).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Panama R. R.); ix, 1868, 104 (San José, Turrialba, and San Carlos, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 302 (Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 58 (Orozi, San Carlos, and Naranjo, Costa Rica).—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 393 (near Punta Arenas, w. Costa Rica).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9.

*Cassicus wagleri* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 72, part (Central America; Colombia).

*Eucorystes wagleri* SCLATER, Ibis, Apr., 1883, 147, part (monogr.; Chontales, Nicaragua; Costa Rica; Veragua; Colombia; Balzar Mts., w. Ecuador); Cat. Birds Brit. Mus., xi, 1886, 312, part (Chontales, Nicaragua; Tucurrique, Costa Rica; Santa Fé and Chitra, Veragua; Chiriqui; Isthmus Panama; Pocune, Colombia; Balzar Mts., w. Ecuador).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 436, part (localities and references from Nicaragua southward; w. Ecuador; Piura, n. w. Peru).—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 112 (Alajuela and Cartago, Costa Rica).—CHERRIE, Auk, ix, 1892, 249 (San José, Costa Rica; descr. young).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 493 (San Juan R., and Rio Frio, Costa Rica; Rio Escondido, Nicaragua).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, 1899, 28 (Foreste del Rio Peripa, w. Ecuador).

*Zarhynchus wagleri* OBERHOLSER, Proc. Ac. Nat. Sci. Phila., June 2, 1899, 215.

*Zarhynchus wagleri wagleri* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 151, in text.

<sup>1</sup>Seven specimens (basal depth of bill measured in only two).

<sup>2</sup>I have not seen specimens from Nicaragua nor from any part of northern South America south of the Panama Railroad. Judging from other species which vary similarly between southern Mexico and the Isthmus of Panama, Nicaraguan specimens are most likely referable to the southern form. Specimens from western Peru and Ecuador, on the other hand, may prove on critical comparison to be separable as a third form, and those from Venezuela should also be carefully compared.

<sup>3</sup>Judging from the colored plate, Gray's bird seems to have been the southern form.

## ZARHYNCHUS WAGLERI MEXICANUS Ridgway.

## MEXICAN OROPENDOLA.

Similar to *Z. w. wagleri* but averaging slightly smaller, especially the bill; frontal shield narrower and less arched; chestnut of head and neck slightly, that of rump and flanks decidedly, darker; black of breast and abdomen more restricted, duller, less glossy.

*Adult male*.—Length (skins), 330.2–368.3 (344.4); wing, 207–218.9 (213.6); tail, 124.5–132.6 (127.3); culmen, 64–67.3 (65.5); greatest width of frontal shield, 18.3–20.3 (19.6); tarsus, 37.6–38.6 (38.1); middle toe, 27.4–30 (28.7).<sup>1</sup>

*Adult female*.—Length (skin), 243.8; wing, 147.3–154.2 (150.6); tail, 98.8–99.1; culmen, 48–48.3 (48.1); greatest width of frontal shield, 14.5–15.2 (14.7); tarsus, 31.8–32.5 (32); middle toe, 24.1–25.4 (24.6).<sup>2</sup>

Southern Mexico, in State of Vera Cruz (Motzorongo, Cerro de Defensa, etc.) to Guatemala; British Honduras?; Honduras?.<sup>3</sup>

*Ocyalus wagleri* (not *Cucicus wagleri* Gray) SCLATER, Proc. Zool. Soc. Lond., 1857, 228 (Mexico); Cat. Am. Birds, 1862, 127 (Guatemala).—SCLATER and SALVIN, Ibis, 1859, 19 (Cahabon, Guatemala); 1870, 836 (San Pedro, Honduras).—MOORE, Proc. Zool. Soc. Lond., 1859, 57, (Chilomo, Honduras).—SALVIN, Ibis, 1861, 141 (Lanquin, Guatemala).

*Cucicus wagleri* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 72, part (Mexico).

[*Ocyalus*] *wagleri* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 35, part.

*Ocyalus waglerii* SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (hot region, Vera Cruz).—BOCCARD, Liste Ois. Guat., 1878, 35.

*Eucorystes wagleri* SCLATER, Ibis, Apr., 1883, 147, part (s. Mexico; Guatemala; Honduras; monogr.); Cat. Birds Brit. Mus., xi, 1886, 312, part (Coban and Choctum, Guatemala; s. Mexico).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 436, part (Cerro de la Defensa, Vera Cruz; Cahabon, Lanquin, and Choctum, Guatemala, Chilomo and San Pedro, Honduras).

*Zarhynchus wagleri mexicanus* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 51. (Motzorongo, Vera Cruz, Mexico, coll. J. S. Nat. Mus.)

Bill longer than head, elongate-conical, acute, compressed, with nearly straight outlines, its basal depth decidedly less than distance from nostril to tip of maxilla, its basal width less than half that distance; culmen straight, ascending but not conspicuously elevated basally, forming a broad, nearly flat, frontal shield, with rounded posterior outline, the extreme posterior portion of which extends about as far as the anterior angle of the eye; gonys straight, decidedly more than half as long as culmen, but about as much shorter than distance from nostril to tip of maxilla; mandibular rami widened, but not swollen, posteriorly, with terminal outline truncate or faintly concave; commissure nearly straight. Nostril much below lateral median line of maxilla, small, broadly oval or nearly circular, bored directly into the horny rhinotheca, beveled off anteriorly, posteriorly touching the loreal feathering. Wing moderate (more than three times as long as culmen), short-tipped (primaries exceeding secondaries by less than length of culmen), rounded; outermost (ninth) primary intermediate between fifth and fourth; seventh, or seventh and sixth, longest; four outer primaries broad and rounded at tips (the first slightly contracted terminally), their inner webs faintly sinuated. Tail about three-fourths as long as wing, graduated, with middle pair of rectrices abruptly abbreviated (intermediate in length between outermost and the next), the rectrices rather narrow, but not obviously contracted terminally nor pointed. Tarsus about as long as the maxilla from nostril, or a little longer, stout, its anterior scutella very distinct; middle toe, with claw, about as long as tarsus; outer toe with claw reaching about to base of middle claw, the inner slightly shorter; hallux shorter than lateral toes, but conspicuously stouter, its claw slightly shorter than the digit; all the claws strongly curved. A crescentic patch immediately behind frontal shield, rictal and sub-orbital regions, anterior and middle portion of malar region, and sides of chin and throat naked, the last separated from the naked cheek-space by a narrow line of feathering; a sparse crest of narrow elongated feathers springing from middle of crown.

*Coloration*.—Black and chestnut, or yellowish olive-green, with tail mostly yellow.

*Range*.—Southern Mexico to Bolivia and southern Brazil. (Five species, only one of them north of the Isthmus of Panama.)

#### KEY TO THE SPECIES OF GYMNOSTINOPS.

- a. Wings, upper tail-coverts, and flanks chestnut.
  - b. Breast, abdomen, and thighs chestnut. (Southern Mexico to Isthmus of Panama.)  
*Gymnostinops montezuma* (p. 180)
  - bb. Breast, abdomen, and thighs black. (Northern Colombia.)  
*Gymnostinops cassini* (p. 181)
- aa. Wings (except a small area next to scapulars), upper tail-coverts, and flanks black. (Northern Colombia.) ..... *Gymnostinops guatimozinus* (p. 182)

## GYMNOSTINOPS MONTEZUMA (Lesson).

## MONTEZUMA OROPENDOLA.

*Adult male.*—Head, neck, and upper part of chest uniform black; tail rich lemon yellow, the middle pair of rectrices brownish black; rest of plumage rich purplish chestnut, or bay, darker on under parts of the body, especially the thighs, the feathers of breast and abdomen being black beneath the surface; tips of longer primaries (beyond emarginations) and whole under surface of wings brownish black; basal half, or more, of bill black, the terminal portion yellowish (more or less orange or orange-red in life); naked skin around base of culmen and bare suborbital and malar spaces flesh color, pale bluish, or rose-pink in life; iris brown; legs and feet black; length (skins), 450.9–520.7 (491); wing, 245.1–273.1 (260.9); tail, 185.9–205.2 (197.4); culmen, 73.7–78.7 (77); greatest width of culmen near base, 13.7–16.3 (14.7); tarsus, 54.6–60.2 (56.6); middle toe, 39.9–44.5 (42.4).<sup>1</sup>

*Adult female.* Similar to the adult male, but much smaller; black of head and neck duller or browner; middle rectrices blackish brown, instead of black, and the median under parts and thighs darker, sometimes approaching brownish black; length (skins), 363.2–406.4 (381.3); wing, 188–205.7 (196.3); tail, 144.8–159.5 (152.4); culmen, 56.4–61 (58.9); width of culmen near base, 10.2–12.4 (11.2); tarsus, 44.5–46.2 (45.2); middle toe, 31.2–33.5 (32.5).<sup>2</sup>

*Young.* Similar to adults, but dark portion of bill not so deep black and pale terminal portion less distinctly yellowish; the line of demarcation between the two areas less distinct.

Southeastern Mexico, in States of Tamaulipas (Alta Mira) and Vera Cruz (Santa Maria, Orizaba, Cordova, Jalapa, Actopam, Barra de

- Cacicus montezuma* LESSON, Cent. Zool., 1830, 33, pl. 7 (Mexico).—GERVAIS, Atlas Zool., 1844, pl. 33.
- Cacicus montezumæ* SCLATER, Proc. Zool. Soc. Lond., 1856, 300 (Cordova, Vera Cruz); 1858, 358 (Comayagua, Honduras), 365 (Jalapa, Vera Cruz).—SCLATER and SALVIN, Ibis, 1859, 19 (Atlantic coast, Guatemala, and Honduras).—MOORE, Proc. Zool. Soc. Lond., 1859, 57 (Omoa, Honduras).—TAYLOR, Ibis, 1860, 111 (Taulevi, Honduras).
- Cassicus montezumæ* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 71 (monogr.).
- Ostinops montezumæ* SCLATER, Proc. Zool. Soc. Lond., 1859, 380 (Playa Vicente, Oaxaca); Cat. Am. Birds, 1862, 128 (Jalapa); Ibis, 1883, 148 (throughout s. Mexico to Panama).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 139, footnote (Mexico; Nicaragua; descr.).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.); ix, 1868, 104 (San Carlos and Angostura, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 353 (Lion Hill); 1867, 279 (Blewfields R., Nicaragua); 1870, 836 (San Pedro, Honduras).—SALVIN, Ibis, 1865, 195 (not on Pacific coast of Guatemala).—FRANTZIUS, Journ. für Orn., 1869, 302 (San Carlos, Angostura, Serapiqui, Tucurriqui, San Mateo, Aguacate, and Orosi, Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 58 (San Carlos and Naranjo, Costa Rica; descr. nest, etc.).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9.—NUTTING, Proc. U. S. Nat. Mus., vi, 1884, 383 (Sucuyá, Nicaragua; habits, etc.), 401 (Los Sábalos, Nicaragua).
- Ostinops montezumæ* BOUCARD, Liste Ois. Guat., 1878, 35.
- Ostinops montezuma* SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 553 (hot region, Vera Cruz).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 149 (Actopam, Barra de Santa Ana, and Paso de la Milpa, Vera Cruz).
- [*Ostinops*] *montezumæ* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 35.
- Gymnostinops montezumæ* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 313.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 437.—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 112 (Jiménez and Cartago, Costa Rica).—GOSS, Auk, v, 1888, 27 (breeding habits; descr. nest and eggs).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 588 (Segovia R., Honduras).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 494 (Nicaragua; habits, song, etc.); xviii, 1896, 630 (Alta Mira, Tamaulipas).
- [*Cassicus*] *bifasciatus* (not of Spix) BONAPARTE, Consp. Av., i, 1850, 427, part (Mexico).
- [*Ostinops*] *bifasciata* CABANIS, Mus. Hein., i, 1851, 187, excl. syn. part (Mexico).

## GYMNOSTINOPS CASSINI Richmond.

## CASSIN'S OROPENDOLA.

Similar to *G. montezuma*, but bill longer, much deeper and broader at base, more attenuated terminally, with light-colored tip occupying less than terminal third, and with the basal portion of the frontal "casque" light-colored; under parts (except under tail-coverts), including thighs, deep black; chestnut of upper parts and under tail-coverts darker (rich deep bay). Much larger than *G. guatimozinus*, with the entire back, scapulars, wings (except terminal portion of longer primaries), rump, and tail-coverts (upper and lower) entirely deep chestnut or bay; black of head, neck, and under parts less intense; basal portion of frontal "casque" light-colored, and naked skin of cheeks light-colored instead of dusky. Bill black, with about 25.4

mm. of the terminal portion and about 5.1 mm. of the basal portion of the frontal shield (extending forward laterally) dull yellowish (orange in life?); naked skin of forehead and cheeks light-colored (pinkish or flesh-colored in life?); legs and feet black.

*Adult male*.—Length (skin), about 533.5; wing, 270.5; tail, 203.2; culmen, 85.9; greatest width of culmen near base, 21.6; depth of bill at base, 35.6; tarsus, 61.5; middle toe, 43.7.

Northern Colombia (Rio Truando).

*Ostinops guatimozinus* (not of Bonaparte) CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 138, 139 (Rio Truando, n. Colombia; descr.; crit.).

*Cassius guatimozinus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 71, part (Rio Truando).

*Gymnostinops guatimozinus* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 439, part (Rio Truando).

*Gymnostinops cassini* RICHMOND, Auk, xv, Oct., 1898, 327 (Rio Truando, n. Colombia; coll. U. S. Nat. Mus.).

#### GYMNOSTINOPS GUATIMOZINUS (Bonaparte).

##### BLACK OROPENDOLA.

*Adult male*.—Head, neck, upper back, and entire under parts, except under tail-coverts, uniform deep black, with a faint bluish gloss; wings black, with innermost coverts dark chestnut or bay; lower back and scapulars dark chestnut or bay, the feathers black beneath surface; rump and upper tail-coverts black, tinged with dark chestnut or bay; under tail-coverts similar, but the longer ones uniform bay; bill black, with the tip yellowish for about 19.1 mm.; naked skin on forehead light-colored (apparently pinkish or flesh-colored in life), but that of cheeks dusky; legs and feet black; length (skin),



*Cassicus guatimozinus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 71, part (Turbo, n. Colombia).

*Gymnostinops guatimozinus* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 314 (Remedios).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 439, pl. 32.—ROBINSON, Flying Trip to Tropics, 1895, 160 (lower Magdalena R., Colombia).

#### Genus OSTINOPS Cabanis.

*Ostinops*<sup>1</sup> CABANIS, Mus. Hein., i, Sept., 1851, 187. (Type, *Oriolus cristatus* Gmelin, = *Xanthornus decumanus* Pallas.)

Very large arboreal Icteridæ with bill longer than head, straight, acute elongate-conical, with basal outline of mandibular rami nearly vertical, truncate, the basal portion of culmen elevated and expanded, forming a narrow but prominent frontal shield; head completely feathered.

Bill slightly longer than head, elongate-conical, acute, compressed, with nearly straight outlines, its basal depth decidedly less than distance from nostril to tip of maxilla, its basal width nearly half that measurement; culmen straight, slightly decurved terminally, the basal portion slightly elevated, arched, and expanded, forming a narrow frontal shield, the rounded posterior extremity of which is about on line with anterior angle of eye; gonys straight, decidedly more than half as long as culmen but shorter than distance from nostril to tip of maxilla; commissure straight to behind nostril, where decidedly deflexed to the rictus; mandibular rami posteriorly widened and truncate, but not swollen. Nostril much below lateral median line of maxilla, small, broadly oval or nearly circular, bored directly into the horny rhinotheca, slightly beveled anteriorly, posteriorly touching the loreal feathering. Wing long (more than four times as long as culmen), the tip long (much longer than culmen) and wedge-shaped; ninth (outermost) primary intermediate between fifth and fourth; seventh or sixth primary longest; four outer primaries gradually contracted terminally and pointed, their inner web faintly sinuated. Tail between three-fourths and four-fifths as long as wing, graduated, with middle pair of rectrices shorter than third pair and differently colored from the others, the rectrices rather narrow but not contracted terminally. Tarsus longer than maxilla from nostril, very stout, its anterior scutella very distinct; middle toe, with claw, decidedly shorter than tarsus (about equal to maxilla from nostril); outer toe with claw reaching slightly beyond base of middle claw, the inner slightly shorter; hallux nearly as long as inner toe, much stouter, its claw decidedly shorter than the digit. Head completely feathered, a sparse crest of narrow elongated feathers springing from middle of crown.

*Coloration*.—Black and chestnut, or olive-green, olive-brown, or russet, with the tail mostly yellow.

<sup>1</sup>“ὄστινός, knöchern, und ὤψ, ὠπός, ἡ Gesicht, Antlitz.”

*Range.*—Isthmus of Panama (Chiriqui) to Bolivia and southern Brazil. (Eight species, all South American, one of them barely passing the Isthmus of Panama.)

OSTINOPS DECUMANUS (Pallas).

CRESTED OROSPINOLA.

*Adult male.*—General color uniform, rather glossy, black, or brownish black (sometimes with a slight purplish reflection in certain lights); rump and upper tail-coverts dark purplish chestnut or bay, the under tail-coverts similar but lighter (more burnt sienna); tail rich lemon yellow, with middle pair of rectrices black; bill pale greenish yellow; legs and feet black; length (skins), 416.6–463.6 (433.1); wing, 215.9–250.2 (236); tail, 185.4–221 (202.2); culmen, 55.9–66.5 (62.2); depth of bill at base, 25.9–30 (28.2); width of maxilla between lores, 10.2–13 (11.7); tarsus, 48.3–55.4 (51.3); middle toe, 34.3–40.6 (37.6).<sup>1</sup>

*Adult female.*—Similar in coloration to the adult male but much smaller, with crest less developed; length (skins), 317.5–355.6 (326.6); wing, 158.8–186.7 (169.2); tail, 134.6–177.8 (151.9); culmen, 42.9–50.8 (46.7); depth of bill at base, 20.3–22.9 (21.8); width of culmen between lores, 7.9–9.9 (9.1); tarsus, 38.6–43.2 (41.1); middle toe, 27.2–30.5 (29.2).<sup>2</sup>

*Young.*—Similar to adults, but the black duller, the chestnut of rump, etc., less bright and much less sharply defined, and the bill pale yellowish brown or dull brownish white instead of pale greenish

<sup>1</sup> Eleven specimens.

<sup>2</sup> Ten specimens.

Specimens from eastern Ecuador average larger, those from southern Brazil smaller.

yellow. (Some specimens apparently nearly or quite mature have indistinct brownish margins to posterior scapulars and interscapulars.)

Chiriqui (Bugabá) and Isthmus of Panama (Lion Hill, Chepo, Rio Lara) to eastern Peru (Pebas, Santa Cruz, Yurimaguas, Rio Ucayali, Chyavetas, Chamicuros, etc.), Bolivia (Tilotilo), Paraguay (Lambaré), southern Brazil (Chapada, province of Matto-Grosso; Blumenau, province of Santa Catarina; Piquete, province of São Paulo; Ypanema; Bahia, etc.), British Guiana (Bartica Grove), Trinidad, and Tobago.

*Xanthornus decumanus* PALLAS, Spicil. Zool., fasc. vi, 1769, 1 ("America").

*Ostinops decumanus* SALVIN and GODMAN, Ibis, 1879, 200 (San José and Atanques, prov. Santa Marta, Colombia; crit. nom.); Biol. Centr.-Am., Aves, i, 1886, 440 (Bugaba, Chiriqui; Lion Hill and Chepo, Isthmus of Panama; Turbo, n. Colombia; Guiana; Bolivia; s. e. Brazil).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 508 (Remedios, Antioquia).—SCLATER, Ibis, 1883, 151 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 315 (Bugaba, Chiriqui; Lion Hill and Chepo, Isthmus of Panama; Atanques, Bogota, and Antioquia, Colombia; Sarayacu, e. Ecuador; Pebas and Santa Cruz, e. Peru; Tilotilo, Bolivia; Barra do Rio Negro, Ypanema, and Bahia, Brazil; Bartica Grove, British Guiana; Tobago).—TACZANOWSKI, Orn. du Pérou, ii, 1885, 404.—SALVIN, Ibis, 1885, 217 (Bartica Grove, British Guiana).—BERLEPSCH, Journ. für Orn., 1887, 10 (Lambaré, Paraguay), 116 (Paraguay); 1889, 299 (Yurimaguas, n. e. Peru).—ALLEN, Bull. Am. Mus. N. H., ii, 1889, 84 (lower Beni R., Bolivia); iii, 1891, 376 (Chapada, prov. Matto-Grosso, s. w. Brazil; descr. nest and eggs, etc.).—CHAPMAN, Auk, vii, 1890, 269 (Santarem, lower Amazon); Bull. Am. Mus. N. H., vi, 1894, 35 (Trinidad; habits; notes).—CORY, Auk, x, 1893, 220 (Tobago).—ROBINSON, Flying Trip to Tropics, 1895, 160 (Magdalena R., Colombia).—PHELPS, Auk, xiv, 1897, 364 (Cumanacoa, Venezuela).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 177 (Palomina, prov. Santa Marta, Colombia).—STONE, Proc. Ac. Nat. Sci. Phila., 1899, 307 (Honda, Rio Combeima, and Nevada del Tolima, centr. Colombia).—SALVADORI, Boll. Mus. Zool., etc., Torino, xiv, 1899, 5 (Rio Lara, Isthmus of Panama); xv, no. 378, 1900, 6 (Urucum, prov. Matto-Grosso, s. w. Brazil).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, 1899, 28 (Gualaquiza and Valle del Zamora, e. Ecuador).—IHERING, Aves de S. Paulo, 1899, 169 (Piquete, prov. S. Paulo, s. Brazil).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 163 (Ouaca, prov. Santa Marta, Colombia).—ROBINSON and RICHMOND, Proc. U. S. Nat. Mus., xxiv, 1901, 175 (Cucurutí and San Julian, Venezuela).

(?) *Xanthornus maximus* PALLAS, Spicil. Zool., fasc. vi, 1769, 3 pl. 1 (America).

*Oriolus citrius* MÜLLER, Syst. Nat. Suppl., 1776, 87 (based on *Cassique huppé*, de Cayenne Daubenton, Pl. Enl., pl. 344).

*Cassicus citreus* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 68 (monogr.).

*Oriolus cristatus* BODDAERT, Tabl. Pl. Enl., 1783, 21 (based on *Cassique huppé*, de Cayenne Daubenton, Pl. Enl., pl. 344).

[*Oriolus*] *cristatus* GMELIN, Syst. Nat., i, 1788, 387.—LATHAM, Index Orn., i, 1790, 174.

*Icterus cristatus* TEMMINCK, Cat. Syst., 1807, 46.

*Cassicus cristatus* VIEILLOT, Nouv. Dict. d'Hist. Nat., v, 1816, 362; Enc. Méth., ii, 1823, 721.—MAXIMILIAN, Beitr. Naturg. Bras., iii, 1831, 1220.—TSCHUDI, Fauna Peruana, Aves, 1849, 232.—CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 680.—BURMEISTER, Syst. Ueb. Th. Bras., iii, 1856, 275.—DESCOURTILZ, Orn. Brés., 1854-56, pl. 45, fig. (3).—BERLEPSCH, Journ. für Orn., 1873, 248 (Blumenau, prov. Santa Catarina, s. Brazil; localities, references, etc.).

(*Cassicus*) *cristatus* SWAINSON, Birds Brazil, etc., 1841, pl. 32.

[*Cassicus*] *cristatus* BONAPARTE, Consp. Av., i, 1850, 427 (Guiana; Brazil).

Ps[arocolius] *cristatus* WAGLER, Syst. Av., 1827, Psarocolius, Sp. 3.

O[stinops] *cristatus* CABANIS, Mus. Hein., i, Sept., 1851, 187 (Brazil; Guiana; Venezuela).

*Ostinops cristatus* SCLATER, Proc. Zool. Soc. Lond., 1855, 153 (Bogota); 1858, 455 (Gualaquiza Ecuador); Cat. Am. Birds, 1862, 127 (Bogota).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 138 (Turbo and Rio Atrato, n. Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).—REINHARDT, Fuglef. Bras. Camp., 1870, 211 (Guache and Japui, Brazil).—TAYLOR, Ibis, 1864, 83 (Trinidad).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 354 (Panama R. R.); 1866, 182 (Rio Ucayali, e. Peru); 1867, 750 (Rio Huallaga, e. Peru), 978 (Pebas, upper Amazon); 1873, 265 (Pebas, lower Ucayali, Chyavetas, Chamicuros, and Santa Cruz, e. Peru); 1879, 608 (Prov. Yungas, Bolivia).—SALVIN, Proc. Zool. Soc. Lond., 1870, 190 (Bugaba, Chiriqui).—FINSCH, Proc. Zool. Soc. Lond., 1870, 578 (Trinidad).—WART, Ibis, 1871, 328 (lower mountain dists., Colombia).—PELZELN, Orn. Bras., 1871, 191.—ALLEN, Bull. Essex Inst., viii, 1876, 79 (Santarem, lower Amazon). [Ostinops] *cristatus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 35.

#### Genus CASICUS Lacépède.

*Cacicus* LACÉPÈDE, Tableau méthod. des Mammif. et des Oiseaux, 1799, 6. (Type, "*Cacique*," = *Cassicus affinis* Swainson.)

*Cassicus* ILIGER, Prodrornus Orn., 1811, 214. (Type, *Oriolus hamorrhous* LINNÆUS.)

(?) *Archiptanus* CABANIS, Mus. Hein., i, Sept., 1851, 186. (Type, *Cassicus albirostris* Vieillot.)

Medium-sized to rather large arboreal Icteridæ with bill elongate-conical, acute, the culmen more or less widened, sometimes decidedly swollen, basally; nostrils on or below lateral median line of maxilla, small, bored directly into the horny rhinotheca; tarsus not longer than culmen, second to or longer than middle toe, with claws coloration black

loral antia to the rictus—the portion immediately beneath the loral antia sometimes slightly convex. Nostril on lateral median line of maxilla or below (in typical species decidedly below). narrow, longitudinal, bored directly into the horny rhinotheca, usually more or less beveled anteriorly, the posterior end in contact with feathering of the loral antia. Wing moderate to long (about four to nearly five times as long as culmen, about four and one-third to five times as long as tarsus), its tip rather short to long (much less than length of culmen to much more), rounded; ninth (outermost) primary shorter than fifth (shorter than third in *C. leucorhamphus*, equal to first in *C. chrysonotus*); eighth to sixth or (in *C. chrysonotus*) seventh to fifth longest, the eighth, seventh, and sixth or (in *C. chrysonotus*) seventh, sixth, and fifth nearly equal; in typical species the longer primaries gradually, but not conspicuously, narrowed terminally. Tail nearly two-thirds to more than seven-eighths as long as wing, or (in *C. chrysonotus*) longer than wing, subemarginate, double-rounded, or graduated (graduation always less than length of culmen). Tarsus shorter than culmen to slightly longer, about one-fifth to two-ninths as long as wing, its anterior scutella distinct; middle toe, with claw, slightly to decidedly shorter than tarsus; lateral toes with claws reaching to or slightly beyond base of middle claw; hallux shorter than lateral toes or (in *C. leucorhamphus* and *C. chrysonotus*) about as long, but much stouter, its claw decidedly shorter than the digit; all the claws strongly curved, acute.

*Coloration*.—Black, with a scarlet or yellow patch on rump; some of the yellow-rumped species with a yellow patch on wing-coverts, some with also the tail-coverts and base of tail yellow; sexes alike in coloration.

*Range*.—Nicaragua to western Ecuador, Bolivia, Paraguay, and southern Brazil. (Eleven species, all South American, only two of them reaching the Isthmus of Panama.)

I have been strongly tempted to subdivide this genus by removing at least *C. chrysonotus*, which differs strikingly in its weak bill, short-tipped and much-rounded wing, long tail, and apparently different proportionate length of the toes; but the only specimen of this species that I have been able to examine is a young bird, and I can not be sure that the peculiarities observed would be equally evident in the adult. *C. leucorhamphus* agrees in some characters with *C. chrysonotus*, though not to the same degree, and seems, on the whole, to be structurally intermediate between that species and those with the tail-coverts and base of tail yellow (*C. persicus*, *C. vitellinus*, and *C. flavicrissus*).

*Cassicus albirostris* Vieillot is also probably not a member of this genus, and should without much doubt be placed in the genus *Archiplanus* Cabanis, of which it is the type and only known species. Of this species I have seen only the female, which is a very small bird (less in size than the average *Icterus*), with a decidedly wedg

shaped bill, definite though slight superior operculum to the rather large and high nostrils; weak feet, slightly rounded tail, and rounded wing (ninth primary intermediate between fourth and third). Except in its very small size it comes rather near the aberrant species (*C. leucorhamphus* and *C. chrysonotus*) in structural details, but has the bill more perfectly wedge-shaped, with the culmen quite straight, instead of distinctly decurved terminally.

Without better specimens of *C. chrysonotus* and *C. albirastris*, however, I am not able to quite satisfy myself as to the proper limits of the genus, and therefore for the present leave them as defined by Dr. Selater.

## KEY TO THE SPECIES OF CACICUS.

- a. Rump (also tail-coverts, base of tail, and patch on wing-coverts), yellow; culmen 31.8 or more. (Colombia, including Isthmus of Panama.) ..... *Cacicus vitellinus* (p. 188)  
 aa. Rump orange-red or scarlet; culmen not more than 30.5. (Isthmus of Panama to Nicaragua.) ..... *Cacicus microrhynchus* (p. 189)

## CACICUS VITELLINUS Lawrence.

## LAWRENCE'S CACIQUE.

*Adult male*.—General color uniform deep black, with a slight bluish gloss in certain lights, the plumage of neck and body white at base (concealed); lower back, rump, upper and under tail-coverts, and small wedge-shaped patch on inner portion of wing, rich saffron yellow varying to orange-yellow; basal portion of tail (mostly concealed by the coverts) paler yellow, the shafts of middle rectrices, within the yellow portion, nearly or quite white; innermost secondaries abruptly white at concealed bases; bill pale grayish yellow or greenish yellow, sometimes darker, more olivaceous basally; legs and feet black; length

Although united by Sclater and others to *C. flavicrissus* Sclater, this bird is nevertheless quite distinct, at least subspecifically. It is decidedly larger than *C. flavicrissus*,<sup>1</sup> especially the bill, which is much deeper and broader at the base and otherwise different in shape, and the yellow patch on the wing is conspicuously smaller (much less than half as large) in both sexes. Whether the two forms intergrade or not I am unable to state, not having been able to examine specimens from intermediate territory.

*Cassicus icteronotus* (not of Vieillot) CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 139 (Turbo and delta of Rio Atrato, n. Colombia).

*Cassiculus icteronotus* LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).

*Cassiculus chrysonotus?* (not *Cassicus chrysonotus* Lafresnaye and D'Orbigny) CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 139 (Turbo).

*Cassicus persicus* (not *Oriolus persicus* Linnaeus) SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 107 (Lion Hill).

*Cassicus vitellinus*, LAWRENCE, Proc. Ac. Nat. Sci. Phila., Apr., 1864, 107 (Lion Hill, Panama R. R.; coll. G. N. Lawrence; also "Nicaragua").—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 66 (monogr.; Turbo, Rio Atrato, and Panama, Colombia; "Nicaragua"; "Mexico?").

*Cassicus flavicrissus* (not *Cassiculus flavicrissus* Sclater) WYATT, Ibis, 1871, 329 (Lake of Paturia, Colombia); 1872, 468 (syn.).—SCLATER and SALVIN, Ibis, 1871, 329 (crit.).—SCLATER, Ibis, 1883, 158, part (monogr.); Cat. Birds Brit. Mus., xi, 1886, 322, part (Lion Hill and Panama, Panama R. R.; Remedios, prov. Antioquia, and Magdalena Valley, Colombia).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 441, part (Lion Hill, Panama R. R.; Turbo, n. Colombia).—ROBINSON, Flying Trip to Tropics, 1895, 160 (Magdalena R., Colombia).

[*Cassicus*] *flavicrissus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 35, part (Colombia; Panama).

### CASICUS MICRORHYNCHUS (Sclater and Salvin).

#### SMALL-BILLED CACIQUE.

*Adult male*.—Uniform deep black, relieved by a large triangular patch of flame-scarlet on the rump; bill pale grayish green or dull greenish white; iris white or pale blue; legs and feet black; length

<sup>1</sup> Average measurements of the two are as follows:

Locality.	Wing.	Tail.	Culmen.	Depth of bill at base.	Width of culmen near base.	Tarsus.	Middle toe.
MALES.							
Five adult males of <i>C. vitellinus</i> .....	172.2	111.8	39.1	16.8	8.9	32.8	23.9
Two adult males of <i>C. flavicrissus</i> .....	156.5	101.9	33.3	16.3	7.1	31.8	22.4
FEMALES.							
Six adult females of <i>C. vitellinus</i> .....	133.4	92.2	32.3	14.2	7.6	28.5	20.3
One adult female of <i>C. flavicrissus</i> .....	119.4	83.3	29.2	12.4	6.9	27.9	19.8

(skins), 212.1-228.6 (219.7); wing, 129-134.6 (131.6); tail, 88.9-95.3 (91.4); culmen, 28.5-30.5 (30); depth of bill at base, 10.7-12.4 (11.4); tarsus, 27.2-28.5 (27.7); middle toe, 18-20.3 (19.1).<sup>1</sup>

*Adult female*.—Similar to the adult male, but smaller, with the orange-red rump patch more restricted and usually rather more orange; length (skins), 194.3-195.6 (194.8); wing, 109.7-121.4 (115.8); tail, 79.2-81.3 (80.3); culmen, 27.7-30.5 (28.5); depth of bill at base, 10.9-11.4 (11.2); tarsus, 24.9-27.4 (25.9); middle toe, 17.8-20.3 (19.1).<sup>2</sup>

Nicaragua (Greytown, Rio Escondido, Chontales, etc.), through Costa Rica, Chiriqui, Veragua, and Isthmus of Panama, to northern Colombia (Turbo).

*Cassicus uropygialis* (not of Lafresnaye) CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 139 (Falls of Rio Truando, n. Colombia).

*Cassiculus uropygialis* LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).

*Cassiculus microrhynchus* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 353 (Lion Hill, Panama R. R., Colombia; coll. P. L. Selater).—LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 181 (Greytown, Nicaragua).

*Cassicus microrhynchus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 65 (monogr.).—FRANTZUS, Journ. für Orn., 1869, 303 (Tucurriqui, Costa Rica).—ZKLEIKY, Cat. Aves de Costa Rica, 1882, 9; An. Mus. Nac. Costa Rica, i, 1887, 112 (Pozo Azul de Pirris and Pacuare, Costa Rica).—SCLATER, Ibis, 1883, 162 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 325 (Chontales, Nicaragua; Peje, Costa Rica; Santiago, Cordillera de Tolé, and Bugaba, Veragua; Lion Hill and Panama, Panama R. R.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 442.—CHERRIE, Expl. Zool. Val. Naranjo, 1893, 15; Expl. Zool. Costa Rica, 1893, 30 (Lagarto).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 495 (Rio Escondido, Nicaragua, and Rio Frio, Costa Rica; habits, nest, song, etc.).

[*Cassicus*] *microrhynchus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

*Cassicus microrhynchus* SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (Cordillera de Tolé, Santiago, and Santa Fé, Veragua); 1870, 190 (Bugaba, Veragua); Ibis,



**rictus.** Nostril slightly below lateral median line of maxilla, broadly oval, bored directly into the horny rhinotheca, not beveled anteriorly, the posterior end nearly or quite touching feathers of loreal antiae. Wing rather long (nearly four times as long as culmen), the tip rather long (about as long as culmen), rounded; outermost (ninth) primary intermediate between fourth and third, the sixth, or seventh and sixth, longest, the fifth but little shorter; inner webs of three or four outer primaries rather suddenly narrowed toward tips but not appreciably sinuated. Tail about six-sevenths as long as wing, much rounded or graduated (graduation equal to about one-half the length of culmen, or slightly more), the rectrices rather narrow. Tarsus shorter than culmen, its anterior scutella very distinct; middle toe, with claw, decidedly shorter than tarsus, but longer than maxilla from nostril; outer toe with claw reaching to base of middle claw, the inner decidedly shorter; hallux nearly as long as inner toe, much stouter, its claw shorter than the digit. A conspicuous crest of long, rather broad, soft feathers springing from middle of crown.

*Coloration*.—Black (olive-slaty in female), with whole rump, tail-coverts, most of tail, and a large patch on wing-coverts bright lemon-yellow.

*Range*.—Western Mexico. (Monotypic.)

#### CASSICULUS MELANICTERUS (Bonaparte.)

##### MEXICAN CACIQUE.

*Adult male*.—General color deep black; rump, upper tail-coverts, most of the tail,<sup>1</sup> posterior lesser wing-coverts, middle coverts, innermost greater coverts, and under tail-coverts clear lemon yellow; bill light grayish green or yellowish green (greenish white in life), sometimes drying darker, especially on basal portion; iris brown; legs and feet blackish; length (skins), 274.3–323.9 (293.9); wing, 149.9–163.1 (155.2); tail, 126.5–137.2 (131.3); culmen, 40.4–43.2 (41.9); depth of bill at base, 14.7–15 (15); tarsus, 33.5–35.6 (34.8); middle toe, 23.6–24.1 (23.9).<sup>2</sup>

*Adult female*.—Decidedly smaller than the male and with the black replaced by dark olive-slate above, deep sooty gray below; sides of forehead usually more or less spotted with yellow; yellow of upper tail-coverts tinged with olive; all the yellow rectrices more or less edged with dusky or olive; length (skins), 236.2–261.6 (246.4); wing, 121.9–146.1 (132.3); tail, 106.2–126.5 (113); culmen, 34.8–40.6 (36.8);

<sup>1</sup>The middle pair of rectrices (except concealed base), and greater part of outer web of outermost pair, are black; the remainder of the tail is yellow, though some of the yellow rectrices have more or less dusky near tip of outer webs, the terminal portion of inner web of outermost rectrices also sometimes partly dusky next to the shaft.

<sup>2</sup>Five specimens.

depth of bill at base, 12.2-15.2 (13); tarsus, 30.2-34.8 (31.5); middle toe, 19.8-24.1 (21.6).<sup>1</sup>

Western Mexico, north to State of Sinaloa (Mazatlan, Rosario, etc.), south through territory of Tepic and States of Jalisco, Colima, Guerrero, and Oaxaca (Barrio, Chihuitan, Tehuantepec City, etc.) to Chiapas (Tonala).

*Icterus melanicterus* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1825, 389 (Mexico).

*C[acicus] melanicterus* GRAY, Gen. Birds, ii, 1849, 342.

[*Cassiculus*] *melanicterus* BONAPARTE, Consp. Av., i, 1850, 428.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 35.

*C[assiculus] melanicterus* CABANIS, Mus. Hein., i, 1851, 186.

*Cassiculus melanicterus* SCLATER, Proc. Zool. Soc. Lond., 1859, 380 (Rio Grande, Oaxaca); Cat. Am. Birds, 1862, 129 (Oaxaca); Ibis, 1883, 156 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 328 (Tonala, Chiapas; Acapulco, Guerrero; Presidio and Mazatlan, Sinaloa).—DUGÈS, La Naturelle, i, 1869, 139 (Guerrero, Mexico).—FINSCH, Abh. Nat. Ver. Brem., 1870, 263 (Mazatlan).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 278 (Mazatlan; Tepic; Colima; Rio de Coahuayana; habits; descr. nest and eggs).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 23 (Barrio, Chihuitan, and Tehuantepec City, Oaxaca).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 443.—FERRARI-PÉREZ, Proc. U. S. Nat. Mus., ix, 1886, 149 (Yanhuitlan?, Oaxaca).

*Cassiculus melanicterus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 66 (monogr.; Mazatlan; Acapulco).

*Ps[arocolius] melanicterus* WAGLER, Isis, 1829, 752 (Mexico).

*Icterus diadematus* TEMMINCK, Pl. Col., 1829, pl. 482 and text (Mexico;=female).

*Cassiculus coronatus* SWAINSON, Philos. Mag. new ser., i, 1827, 436 (Temascaltepec, Mexico); Zool. Journ., iii, 1827, 353.

*Xanthornus coronatus* JARDINE and SELBY, Illustr. Orn., 1828, pl. 45 (Mexico).

#### Genus AMBLYCERCUS Cabanis.

overhung by a convex horny operculum (nearly hiding the nostril in *A. holosericeus*); posterior end of nostril touching feathering of loreal antæ. Wing short (a little more than three to about four times as long as culmen), short-tipped (primaries exceeding secondaries by less than distance from nostril to tip of maxilla<sup>1</sup>), excessively rounded; ninth primary shorter than first, the fourth to sixth longest; inner webs of outer three or four faintly sinuated. Tail nearly as long as wing, much rounded, the rectrices broad and rounded at ends. Tarsus longer than culmen, stout, the anterior scutella very distinct; middle toe, with claw, shorter than tarsus but equal to or slightly longer than culmen; outer toe with claw reaching to or beyond<sup>2</sup> base of middle claw, the inner slightly shorter; hallux slightly shorter than inner toe but much stouter, its claw slightly shorter than the digit, strongly arched.

*Coloration*.—Uniform black (more slaty black in females), the bill light colored.

*Range*.—Southern Mexico to Peru, Argentina, Paraguay, and southern Brazil. (Three species.)

While much alike in general appearance, the two commonly known species of this genus are really very distinct in certain structural details and may not be truly congeneric. *A. solitarius* has the nostrils much more open, those of *A. holosericeus* being nearly closed by the much more developed convex overhanging horny operculum; *A. solitarius* has a well-developed crest of soft, decumbent, elongated feathers, while in *A. holosericeus* there is no crest; *A. solitarius* has the wing-tip much longer, the primaries exceeding the secondaries by about the distance from the nostril to the tip of the maxilla, while in *A. holosericeus* they project for not more than the basal depth of the bill; in *A. solitarius* the outermost (ninth) primary is about equal to the secondaries, the eighth being longer than the third, while in *A. holosericeus* the ninth is very much shorter than the shortest secondaries, the eighth being shorter than the first and about equal to the shorter secondaries. The remiges and rectrices are also more firmly webbed in *A. solitarius*.

*A. holosericeus* "is a bird of singular habits, suggesting both an Oriole and a Woodpecker. It hunts along limbs as patiently as a Creeper, tapping here and there or pounding vigorously in its efforts to secure food from cracks and crevices. In short flights it presents a laughable appearance. It progresses by jerky wing-beats, and at the end of each stroke the tail is thrown forward over the head."<sup>3</sup>

<sup>1</sup> Very slightly exceeding secondaries in *A. holosericeus*.

<sup>2</sup> In *A. solitarius*.

<sup>3</sup> Chapman, Bull. Am. Mus. Nat. Hist., viii, 1896, 280.

## AMBLYCERCUS HOLOSERICEUS (Lichtenstein).

## PREVOST'S CATIQUE.

*Adult male*.—Entirely black, most intense anteriorly, duller, and usually more or less tinged with slate color, on rump, tail-coverts, and posterior under parts; bill light olive-yellowish (pale yellowish green to pale sulphur yellow in life), sometimes partly dusky in dried skins; iris white or light yellow; legs and feet dusky horn color in dried skins, plumbeous in life; length (skins), 200.7–264.2 (225); wing, 93.5–109.2 (101.6); tail, 91.4–114.3 (100.3); culmen, 28.5–33.3 (31); depth of bill at base, 13.5–17.5 (15); tarsus, 31.8–35.6 (33); middle toe, 19.1–23.4 (21.3).<sup>1</sup>

*Adult female*.—Similar to the adult male, but decidedly smaller and the black rather duller; length (skins), 190.5–233.7 (206.8); wing, 82.6–97 (91.9); tail, 88.9–101.6 (93.2); culmen, 27.9–31.8 (30); depth of bill at base, 12.7–14 (13.2); tarsus, 20.2–31.8 (30.7); middle toe, 19.8–21.1 (20.3).<sup>2</sup>

Southeastern Mexico, in States of Tamaulipas (Alta Mira), Vera Cruz (hot and temperate zones), Puebla (Metlatoyuca), Mexico (Valley of Mexico), Oaxaca (Teotalcingo, Playa Vicente, Santa Efigenia, etc.), Chiapas (Guichicovi, Huehuetan), and Yucatan, through Central America to Colombia, Venezuela, and western Ecuador (Babahoyo, Guayaquil, Foresto del Rio Peripa, etc.).

*Sturnus holosericeus* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1831, 1 (Mexico: Journ. für Orn., 1863, 55 (reprint)).

*Circus holosericeus* SALVIN, Cat. Strickland Coll., 1882, 262 (Guatemala).

<sup>1</sup> Eighteen specimens.

<sup>2</sup> Seven specimens.

- Cassicus holosericeus* SCLATER, Ibis, 1883, 163 (monogr.).—BOUCARD, Proc. Zool. Soc. Lond., 1883, 445 (Yucatan).—TACZANOWSKI, Orn. du Pérou, ii, 1885, 415.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 149 (Jalapa, Vera Cruz).
- Amblycercus holosericeus* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 327 (Jalapa, Vera Cruz; Tonala, Chiapas; n. Yucatan; Belize, British Honduras; Choctum, Dueñas, and Retalhuleu, Guatemala; Irazú, Costa Rica; Santa Fé and Calovevora, Veragua; Lion Hill and Paraiso Station, Panama R. R.; Bogota, Colombia; Babahoyo, w. Ecuador; Aragua, Venezuela).—SALVIN and GODMAN, Biol. Centr.-Am., Aves., i, 1886, 446 (Valley of Mexico: Teotalcingo, Playa Vicente, and Santa Efigenia, Oaxaca; Guichicovi, Chiapas; Yzabal and Peten, Guatemala; Greytown, Sucuyá, and Los Sábalos, Nicaragua; San José, Turrialba, and Tucurriqui, Costa Rica; Calobre, Veragua; etc.).—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 112 (Pozo Azul de Pirris, Las Trojas, Alajuela, and Jiménez, Costa Rica).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 588 (Segovia R., Honduras).—CHERRIE, Auk, ix, 1892, 249 (Costa Rica, both sides up to 6,000 ft.); Expl. Zool. Costa Rica, 1893, 30 (Palmar, Boruca, and Buenos Aires, s. Costa Rica).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 494 (Rio Escondido, Nicaragua; habits, etc.); xviii, 1896, 630 (Alta Mira, Tamaulipas).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 280 (Chichen Itza, Yucatan; habits).
- Amblyramphus prevostii* LESSON, Cent. Zool., 1830, 159, pl. 54 (Mexico).—GERVAIS, Atlas Zool., 1844, pl. 34.
- [*Cassidulus*] *prevosti* BONAPARTE, Consp. Av., i, 1850, 428 (Mexico).
- Cassidulus prevosti* SCLATER, Proc. Zool. Soc. Lond., 1856, 301 (Mexico); 365 (Jalapa), 380 (Teotalcingo and Playa Vicente, Oaxaca); 1860, 276 (Babahoyo, w. Ecuador), 293 (Esmeraldas, w. Ecuador); 1864, 174 (Valley of Mexico); Cat. Am. Birds, 1862, 129 (Babahoyo, w. Ecuador; Colombia; Guatemala).—SCLATER and SALVIN, Ibis, 1859, 19 (Dueñas, Guatemala); 1860, 34 (Dueñas and Yzabal, Guatemala); Proc. Zool. Soc. Lond., 1864, 353 (Lion Hill, Panama R. R.); 1870, 836 (San Pedro, Honduras).—MOORE, Proc. Zool. Soc. Lond., 1859, 57 (Peten, Guatemala).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill); viii, 1865, 181 (Greytown, Nicaragua).—SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (Santa Fé, Veragua); 1870, 190 (Calovevora and Calobre, Veragua).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 553 (hot and temp. regions Vera Cruz).
- Amblycercus prevosti* CABANIS, Journ. für Orn., 1861, 10 (Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (San José and Turrialba, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 302 (San José, Turrialba, and Tucurriqui, Costa Rica).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9.—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, 1899, 29 (Foreste del Rio Peripa, w. Ecuador).
- Amblycercus prevosti* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 73 (monogr.).
- [*Cassidulus*] *prevosti* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.
- Cassidulus prevosti* LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 23 (Guichicovi, Chiapas; Santa Efigenia, Oaxaca).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1877, 322 (Tumbez, Peru).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 58 (San José, Costa Rica).—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 552 (Chimbo, w. Ecuador; crit.).—NUTTING, Proc. U. S. Nat. Mus., vi, 1883, 383; 1884, 402 (Sucuyá and Los Sábalos, Nicaragua).—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 86 (Baños, Ecuador, 6,200 feet).
- Cassidulus*, sp. ?, BONAPARTE, Proc. Zool. Soc. Lond., 1837, 115 (Guatemala).
- Ps[arocolius] nigerrimus* (not *Cassidulus nigerrimus* Spix) WAGLER, Isis, 1829, 752 (Mexico).
- A[mblycercus] nigerrimus* CABANIS, Mus. Hein., i, Sept., 1851, 190, footnote, part.

## Genus CASSIDIX Lesson.

*Cassidix* LESSON, *Traité d'Orn.*, i, 1831, 433. (Type, *Corvus* (*Cassidix*) *mexicanus* LESSON.)

(?) *Scaphidurus* (not of Swainson, 1827<sup>1</sup>) SWAINSON, *Fauna Bor.-Am.*, ii, 1831, 494. ("Type, *Oriolus niger* Auct.")<sup>2</sup>

*Scaphidura* SWAINSON, *Classif. Birds*, ii, 1837, 272.

Large, wholly black terrestrial or semiterrestrial (?) Icteridæ with long and pointed wing, rather long and rounded tail, stout black bill with broad and flattened mesorhinium, and feathers of sides of neck developed into erectile lateral ruffs.

Bill about as long as head, stout, subconical, much more curved above than below, its basal depth equal to about one-half the culmen, its basal width decidedly less; culmen decidedly convex from base, very broad and flattened basally, forming a more or less conspicuous "frontal shield," with rounded or obtusely pointed posterior extremity; gonys nearly straight, about half as long as culmen, decidedly less than length of maxilla from nostril; commissure nearly straight or faintly concave to beneath the nostril, where strongly deflexed, with a gradual curve, to the rictus. Nostril rather large, broadly oval, horizontal, in lateral median line of maxilla or slightly below, its upper margin formed by the overhanging edge of the broad mesorhinium, posteriorly extending somewhat behind the frontal antiæ. Wing long (more than five times as long as culmen, about four and a half times as long as tarsus), the tip well produced (more than twice as long as culmen), pointed; outermost (ninth) primary longest or at least equal to eighth, the seventh much shorter; inner webs of outer primaries gradually narrowed terminally, but not appreciably sinuated. Tail about three fourths as long as wing, rounded, the rectrices broad at

*Range*.—Southern Mexico to Paraguay and southern Brazil. (Monotypic.<sup>1</sup>)

Notwithstanding resemblance to the Caciques and Oropendolas in the broad and flattened basal portion of the culmen, the relationships of this very strongly characterized genus are evidently much nearer to *Callothrus*, with which it agrees in the remarkable neck-ruff (present only in these two genera), and its parasitic habits. It differs from *Callothrus*, however, in its relatively much longer primaries with their differently shaped inner webs, longer tail, relatively longer bill, with broad and flattened mesorhinium, very much larger size, and other characters.

#### KEY TO THE SUBSPECIES OF CASSIDIX ORYZIVORA.

- a. Plumage strongly glossed with bronze or violet. (Adult males.)
  - b. Metallic gloss bronzy throughout (inclining to violet only on pileum and under parts. (Tropical South America, except Colombia.)
    - Cassidix oryzivora oryzivora* (extralimital)<sup>2</sup>
  - bb. Metallic gloss chiefly or wholly violet.
    - c. Back bronzy; violet tips to feathers of under parts narrower; larger (wing averaging 201.2, tail 152, culmen 37.8). (Colombia, including Isthmus of Panama; Veragua?; Costa Rica?; Nicaragua?.)
      - Cassidix oryzivora violea* (p. 197) •
    - cc. Back violet, like rest of plumage; violet tips to feathers of under parts broader; smaller (wing averaging 189, tail 146, culmen 37). (Southern Mexico to British Honduras.) . . . . . *Cassidix oryzivora mexicana* (p. 199)
- aa. Plumage not strongly glossed with bronze or violet. (Adult females and immature males.<sup>3</sup>)

#### CASSIDIX ORYZIVORA VIOLEA Bangs.

##### COLOMBIAN RICE GRACKLE.

Similar to *C. o. oryzivora*,<sup>2</sup> but decidedly larger, and plumage of adult male glossed with violet instead of bronze (bronzy on back or back and neck-ruffs only).

*Adult male*.—General color black, but feathers of head, neck, and body more or less broadly tipped with glossy violet, this uniform on head, neck, and back (the last inclining decidedly to bronzy), but on the under parts forming a sharply defined terminal band or margin to each feather, the basal black conspicuously exposed, these violet tips becoming narrower posteriorly, and less distinct on rump than on

<sup>1</sup>The single known species differentiated into three or more geographic forms or subspecies.

<sup>2</sup>[*Oriolus*] *oryzivorus* Gmelin, Syst. Nat., i, pt. i, 1788, 386 (Cayenne).—*C[assidix] oryzivora* Cabanis, Mus. Hein., i, Sept., 1851, 194.—*Cassidix oryzivora oryzivora* Bangs, Proc. New Engl. Zool. Club, ii., June 30, 1900, 11 (in text). This form is introduced into the key for sake of comparison.

<sup>3</sup>The series of adult females and immature males is very imperfect, and therefore I am unable to distinguish those of the several forms in the key.

under parts; smaller wing-coverts, tail-coverts, and thighs uniform black, or with indistinct bluish violet margins; larger wing-coverts, remiges, and rectrices faintly glossed with bluish; bill, legs, and feet black; iris yellow or yellowish white; length (skins), 303.5–355.6 (344.2); wing, 179.3–208.3 (201.2); tail, 135.4–159.3 (152.4); culmen, from base, 36.6–39.9 (37.8); depth of bill at base, 17–18.5 (17.8); tarsus, 45–48 (44.2); middle toe, 83.5–86.6 (85.6).<sup>1</sup>

*Adult female*.—Much smaller and duller colored than adult male. Black, with tips of the feathers of head, neck, and body indistinctly tipped with more glossy violaceous-black; bill, legs, and feet black; length (skins), 275.6–308.6 (284.2); wing, 154.2–161.3 (157.5); tail, 112.5–122.4 (117.3); culmen, from base, 31.2–34 (40.9); depth of bill at base, 15.2–15.7 (15.5); tarsus, 39.9–40.9 (40.4); middle toe, 27.4–31.2 (29.5).<sup>2</sup>

*Immature male*.—Similar in coloration to adult female, but larger, slightly more glossy, and with neck-ruffs better developed.

Colombia (Bogota; Manuare, Minca, Pueblo Viejo, La Concepcion, and Palomina, province of Santa Marta; Remedios, province of Antioquia), north to the Isthmus of Panama (Lion Hill, Panama, etc.<sup>3</sup>); Costa Rica?; Nicaragua?<sup>4</sup>

*Cassidix oryzivora* (not *Oriolus oryzivorus* Gmelin) SCLATER, Cat. Am. Birds, 1862, 142, part (Bogota, Colombia); Ibis, 1884, 165, part (monogr.); Cat. Birds Brit. Mus., xi, 1886, 329, part (Lion Hill, Panama R. R.; Minca, Manuare, Bogota, and Remedios, Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 354 (Isthmus of Panama); 1879, 510 (Remedios, Colombia).—SALVIN and GODMAN, Ibis, 1879, 201 (Manuare, Prov. Santa Marta, Colombia, 2,700 ft.); 1880, 123 (Santa Marta); Biol. Centr.-Am., Aves, i, 1886, 444, part (Lion Hill, Panama R. R.; Colombia).—BANDS, Proc. Biol. Soc. Wash., xii, 1898, 159, 178 (Pueblo Viejo, 8,000 ft., and Palomina, prov. Santa Marta,



[*Cassidix*] *oryzivora* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 39, part.

*Cassidix barita* (not *Scaphidura barita* Swainson) LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 296 (Isthmus of Panama).

*Cassidix oryzivora violea* BANGS, Proc. New Engl. Zool. Club, ii, June 30, 1900, 11 (La Concepcion, prov. Santa Marta, Colombia, 3,000 ft. alt.; coll. E. A. and O. Bangs).

The following citations are doubtfully referable to this form, no specimens from the localities mentioned having been seen by me:

*Cassidix oryzivora* SCLATER, Proc. Zool. Soc. Lond., 1859, 140 (Pallatanga, w. Ecuador); Cat. Am. Birds, 1862, 142, part (Pallatanga); Cat. Birds Brit. Mus., xi, 1886, 329, part (Chitra and Calovevora, Veragua; Jima, Sical, and Pallatanga, w. Ecuador).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1867, 279 (Blewfields R., Nicaragua).—SALVIN, Proc. Zool. Soc. Lond., 1870, 191 (Veragua).—ZELEDON, Cat. Aves de Costa Rica, 1882, 10; Anal. Mus. Nac. Costa Rica, i, 1887, 112 (Costa Rica).—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 117 (Pallatanga).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (Rio Escondido, Nicaragua).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, 1899, 30 (Foreste del Rio Peripa and Sponde del Rio Daule, w. Ecuador).

*Cassidix ater* (not *Cassicus ater* Vieillot?) TACZANOWSKI, Proc. Zool. Soc. Lond., 1877, 323 (w. Peru).

### CASSIDIX ORYZIVORA MEXICANA (Lesson).

#### MEXICAN RICE GRACKLE.

Similar to *C. o. violea* but smaller, with more slender bill; adult male with more glossy and uniformly violet plumage, even the back being violet (not bronzy), and the violet tips to feathers of under parts broader, almost (sometimes quite) concealing the black basal portion of the plumage; iris red.<sup>1</sup>

*Adult male*.—Length (skins), 330.2–355.6 (343.4); wing, 177–202.7 (189); tail, 133.4–151.6 (145.8); culmen, from base, 35.8–37.6 (37.1); depth of bill at base, 16.3–17.3 (17); tarsus, 40.6–43.9 (42.9); middle toe, 31.8–34.5 (33.3).<sup>2</sup>

*Adult female*.—Length (skin), 293.4; wing, 160; tail, 118.9; depth of bill at base, 14.7; tarsus, 38.9; middle toe, 28.7.<sup>3</sup>

Southern Mexico, in State of Vera Cruz (Chichicxtla, Santa Maria, Mata Bejuco, Orizaba, etc.), and south to British Honduras (possibly to Nicaragua).<sup>4</sup>

*Cassidix oryzivora* (not *Oriolus oryzivorus* Gmelin) SCLATER, Proc. Zool. Soc. Lond., 1858, 98 (Mexico); Cat. Am. Birds, 1862, 142, part (Orizaba, Vera Cruz); Ibis, 1884, 165, part (monogr.); Cat. Birds Brit. Mus., xi, 1886, 329, part (Orizaba; Choctum, Guatemala).—MOORE, Proc. Zool. Soc. Lond., 1859,

<sup>1</sup>Sumichrast, manuscript.

<sup>2</sup>Six specimens.

<sup>3</sup>One specimen.

<sup>4</sup>No specimen of this genus seen by me from the region between British Honduras and the Isthmus of Panama.

- 57 (Chilomo, Honduras).—SALVIN, *Ibis*, 1861, 353 (Honduras).—BOCCARD, *Liste Ois. Guat*, 1878, 36 (Guatemala).  
 [*Cassidix*] *oryzivora* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 39, part.  
*Corvus* [*Cassidix*] *mexicanus* (not *Corvus mexicanus* Gmelin) LESSON, *Traité d'Orn.*, 1831, 433 (ex *Corvus mexicanus* Gmelin).  
*Cassidix mexicanus* CASSIN, *Proc. Ac. Nat. Sci. Phila.*, 1866, 416 (Mexico; Central America; monogr.).  
*Cassidix* [*Cassidix*] *oryzivora mexicana* BANGS, *Proc. New Engl. Zool. Club*, ii, June 30, 1900, 11 (in text).  
*Cassidix oryzivora mexicana* BANGS, *Auk*, xviii, 1901, 370 (David, Chiriqui).  
*Cassidix crassirostris*? (not *Scaphidura crassirostris* Swainson) MOORE, *Proc. Zool. Soc. Lond.*, 1859, 57 (Omoa, Honduras).

## Genus CALLOTHRUS Cassin.

*Callothrus* CASSIN, *Proc. Ac. Nat. Sci. Phila.*, Mar., 1866, 18. (Type, *Psarocolius rufus* Wagler).

Rather small unicolored terrestrial Icteridæ with bill shorter than head, stout (basal depth more than half the length of culmen), the maxilla shallower subbasally than the mandible; inner web of primaries conspicuously widened beyond middle portion, the widened portion terminating on second and third quills in a conspicuous tooth-like point; adult male with a conspicuous erectile ruff on sides of neck.

Bill shorter than head, stout-conical, with upper outline decidedly though slightly curved, its basal depth decidedly more than half the length of culmen, its basal width nearly half the length of culmen; culmen straight in middle, slightly convex terminally and basally, distinctly but not sharply ridged; gonys straight, decidedly shorter than maxilla from nostril; commissure straight or nearly so about as far as beneath nostril, then strongly and rather abruptly deflexed to the

notus. Nostril small, roundish, partly surrounded posteriorly by

feathers. Tarsus small, slender, with a small spur. Middle toe with a small

conspicuous erectile ruff with a naked or sparsely downy space (concealed) immediately behind the lateral portions of the ruff.

*Coloration*.—Adult males bronzy black with a soft, silky luster, the wings and tail glossy bluish green; adult females dull black or grayish.

*Range*.—Southern Texas and northwestern Mexico to northern South America. (Three species.)

KEY TO THE SPECIES AND SUBSPECIES OF CALLOTHRUS.

- a. Wings and tail strongly metallic (bluish or greenish). (Adult males.)
  - b. Plumage of head, neck, and body dark greenish bronzy.
    - c. Rump bronzy, like back, etc.; plumage of head, neck, and body roughly silky; bill more slender. (Southern Texas, through eastern Mexico to Veragua.) ..... *Callothrus robustus*, adult male (p. 201)
    - cc. Rump violet; plumage of head, neck, and body smoothly silky; bill stouter.
      - d. Larger (wing averaging 119.1, tail 84.8, culmen 23.1). (Northwestern Mexico.) ..... *Callothrus æneus æneus*, adult male (p. 203)
      - dd. Smaller (wing averaging 108.7, tail 77.5, culmen 21.3). (Southwestern Mexico.) ..... *Callothrus æneus assimilis*, adult male (p. 204)
  - bb. Plumage of head, neck, and body lustrous silky brown. (Caribbean coast of Colombia.) ..... *Callothrus armenti*, adult male (extralimital)<sup>1</sup>
- aa. Wings and tail not strongly metallic. (Adult females and young.)
  - b. General color black or very dark sooty.
    - c. Wings and tail glossed with bluish green.
      - ..... *Callothrus robustus*, adult female (p. 202)
    - cc. Wings and tail not glossed ..... *Callothrus robustus*, young male (p. 202)
  - bb. General color grayish sooty or sooty grayish.
    - c. Faintly glossed above, the feathers of back, etc., with darker centers.
      - ..... *Callothrus æneus æneus*, adult female (p. 204)
    - cc. Without gloss above, and feathers of back without darker centers.
      - d. Darker, especially the under parts, which are unstreaked.
        - ..... *Callothrus robustus*, young female (p. 202)
      - dd. Paler, especially the under parts, which are indistinctly streaked with paler, more yellowish, gray. .... *Callothrus æneus æneus*, young male (p. 204)

CALLOTHRUS ROBUSTUS (Cabanis).

RED-EYED COWBIRD.

*Adult male*.—Head, neck, and body dark greenish bronzy, the plumage soft and silky, but not smooth, presenting the appearance of having been wet and imperfectly dried; tail-coverts blue-black, the upper ones glossed with violet; wings glossy dark greenish blue, brightest on greater coverts and tertials, less bright, as well as more greenish, on primaries, primary coverts, and alula; lesser wing-coverts dark metallic violet, the middle coverts violet-bluish; tail dark metallic bluish green or greenish blue; bill black; iris red; legs and feet black or brownish black; length (skins), 196.8–223.5 (206.5); wing, 111.8–120.1 (116.3); tail, 75.7–82.3 (79.2); culmen, from base, 22.3–23.9 (23.1);

<sup>1</sup> *M[olothrus] armenti* Cabanis, Mus. Hein., i, Sept., 1851, 192, footnote (Cartagena, Colombia; coll. Berlin Mus.). This species, which I have not seen, is introduced into the key for sake of comparison. It is the only known extralimital form.

depth of bill at base, 11.9-13.2 (12.2); tarsus, 29.7-32.0 (30.8); middle toe, 21.1-23.4 (22.6).<sup>1</sup>

*Adult female*.—Dull black, the under parts, especially throat, sometimes dark sooty brownish; back and scapulars very faintly, the wings, upper tail-coverts, and tail strongly, glossed with bluish green; neck ruffs much less developed than in the male; length (skins), 165.1-205.7 (186.4); wing, 97.5-106.7 (102.9); tail, 64.0-74.7 (73.1); culmen, from base, 19.8-21.3 (20.6); depth of bill at base, 10.4-11.2 (10.9); tarsus, 26.2-29.7 (27.9); middle toe, 19.8-21.8 (20.8).<sup>2</sup>

*Young male*.—Dull sooty black or dark sooty, the feathers of the under parts of the body with more or less distinct narrow margins of paler; mandible brownish basally.

*Young female*.—Paler and grayer than the young male; above sepia or grayish sepia, beneath paler and grayer, with indistinct paler narrow margins to the feathers.

Southern Texas (breeding north to San Antonio), through eastern Mexico (States of Tamaulipas, Vera Cruz, Puebla, northern Oaxaca, and Yucatan) and Central America to Veragua (to Isthmus of Panama?).

*Molothrus xeneus* (not *Psarocolius xeneus* Wagler) SCLATER, Proc. Zool. Soc. Lond., 1856, 300 (Cordova, Vera Cruz); 1859, 365 (Jalapa, Vera Cruz); (?) 381 (Oaxaca); Cat. Am. Birds, 1862, 135 (Jalapa); Cat. Birds Brit. Mus., xi, 1886, 334, part (Orizaba and Jalapa, Vera Cruz; Oaxaca?; n. Yucatan; Choctum and Dueñas, Guatemala; Orosí, Costa Rica; Calobre and Chitra, Veragua).—SALVIN and SCLATER, Ibis, 1860, 34 (Dueñas, Guatemala).—OWEN, Ibis, 1861, 61 (San Gerónimo, Guatemala; descr. eggs).—CABANIS, Journ. für Orn., 1861, 81 (San José, Costa Rica).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 18, part (Jalapa; Yucatan; Nicaragua; Costa Rica; Panama).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (San José, Costa Rica).—S. M. HAST, Mem. Ent. Soc. N. H., 1, 1869, 302. Leg. and type, Boston.

Nutt. Orn. Club, i, 1876, 88 (Fort Brown, Texas); ii, 1877, 85 (do.; habits); Proc. U. S. Nat. Mus., i, 1878, 130 (do.).—BOUCARD, Liste Ois. Guat., 1878, 36; Proc. Zool. Soc. Lond., 1878, 59 (San José, Costa Rica); 1883, 445 (n. Yucatan).—BREWER, Ibis, 1878, 116 (Fort Brown, Texas; descr. eggs).—RIDGWAY, Proc. U. S. Nat. Mus., i, 1878, 130, part (synonymy; diagnosis); ix, 1886, 151 (crit.; Chietla, etc., Puebla; Jalapa); Nom. N. Am. Birds, 1881, no. 259.—COUES and SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv., 1878, 23 (Brownsville and Hidalgo, Texas; habits, synonymy, diagnosis, etc.).—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 396 (Lometa, Texas; habits, measurements, etc.).—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 90.—COUES, Check List, 2d ed., 1882, no. 315.—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 392 (La Palma, w. Costa Rica).—ZELEDON, Cat. Aves de Costa Rica, 1882, 10.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 151 (Izucar de Matamoras, Chietla, and Acatlan, Puebla; Jalapa, Vera Cruz).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 496.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 451, part (all localities except Mazatlan, Presidio, Manzanillo Bay, and mountains of Colima).

[*Molothrus*] *æneus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37, part.

*M[olothrus] æneus* COUES, Key N. Am. Birds, 2d ed., 1884, 403.—RIDGWAY, Man. N. Am. Birds, 1887, 367, part.

*Agelaius æneus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1848, 90 (Puente Nacional, Vera Cruz).

*Icterus bonariensis* (not *Tanagra bonariensis* Gmelin) BONAPARTE, Proc. Zool. Soc. Lond., 1837, 116 (Guatemala).

*M[olothrus] robustus* CABANIS, Mus. Hein., i, Sept., 1851, 193, footnote (Mexico; coll. Berlin Mus.?); Journ. für Orn., 1861, 81.—RIDGWAY, Man. N. Am. Birds, 2d ed., 1896, 367, part.

*C[allothrus] robustus* RIDGWAY, Man. N. Am. Birds, 1887, 589; 2d ed., 1896, 600.

*Callothrus robustus* RIDGWAY, Man. N. Am. Birds, 1887, 594.—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 112 (San José, Cartago, Naranjo de Cartago, and Alajuela, Costa Rica).—STONE, Proc. Ac. Nat. Sci. Phila., 1890, 208 (Yucatan), 212 (Orizaba).—CHERRIE, Auk, vii, 1890, 334 (San José, Costa Rica); ix, 1892, 250 (do.).—ATTWATER, Auk, ix, 1892, 237 (San Antonio, Texas, breeding).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (San Carlos, Nicaragua).—BENDIRE, Rep. U. S. Nat. Mus., 1893, 599 (descr., geogr. range, habits, etc.); Life Hist. N. Am. Birds, ii, 1895, 443, pl. 6, fig. 9.—SINGLEY, Rep. Geol. Surv. Tex., 1894, 371 (Rio Grande City; Hidalgo).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 2d ed., 1895, no. 496.—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 280 (Chichen Itza, Yucatan; habits).—NEHR-LING, Our Native Birds, etc., ii, 1896, 246.

### CALLOTHRUS ÆNEUS ÆNEUS (Wagler).

#### BRONZED COWBIRD.

Similar to *C. robustus*, but slightly larger, bill relatively stouter, and female very different in coloration.

*Adult male*.—Hardly distinguishable in coloration from the adult male of *C. robustus*, but rump violet, like the upper tail-coverts, instead of bronzy, like the back, and plumage of the head, neck, and body smoother and more glossy; length (skins), 198.1–228.6 (216.4); wing, 117.1–121.9 (119.1); tail, 81.8–87.9 (84.8); culmen, from base,

22.4-23.6 (23.1); depth of bill at base, 13-14 (13.2); tarsus, 27.9-30.2 (29.5); middle toe, 22.1-23.4 (22.9).<sup>1</sup>

*Adult female.*—Above dark mouse gray, the feathers with darker centers, especially on back and scapulars, where slightly glossed with greenish blue; wings and tail grayish dusky, faintly glossed with greenish, the feathers with narrow paler grayish margins, most distinct on smaller wing-coverts; under parts paler mouse gray, sometimes indistinctly streaked with darker, the chin and throat paler; bill, legs, and feet black; length (skins), 193-210.8 (194.8); wing, 101.3-107.4 (104.6); tail, 69.1-76.2 (73.4); culmen, from base, 19.3-20.3 (19.8); depth of bill at base, 11.7-12.4 (11.9); tarsus, 25.4-27.9 (27.4); middle toe, 20.1-21.1 (20.6).<sup>1</sup>

*Young male.*—Similar to the young female of *C. robustus* but decidedly paler, especially below; upper parts deep sooty grayish (similar to under parts of young female of *C. robustus*), the wing-coverts with terminal margins of paler gray; under parts similar but rather paler, indistinctly streaked with dull olive-yellowish, the abdomen inclining to the latter color. (Young female not seen.)

Northwestern Mexico, in States of Sonora (Hermosilla) and Sinaloa (Culiacan, Mazatlan, etc.) and Territory of Tepic (San Blas, Acaponeta, etc.).

*Psarocolius aeneus* WAGLER, Isis, 1829, 758 ("Mexico"; ex *Icterus aeneus* Lichtenstein, manuscript; coll. Berlin Mus.).—BONAPARTE, Consp. Av., i, 1850, 426.

*A[gelaius] aeneus* GRAY, Gen. Birds, ii, 1849, 346.

*M[olothrus] aeneus* CABANIS, Mus. Hein., i, Sept., 1851, 192, footnote (Mexico).—RIDGWAY, Man. N. Am. Birds, 1887, 367, part.

*Molothrus aeneus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 18, part (Mazatlan).—

LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281, part (Mazatlan; habits).—

SCHAEFER, Cal. Birds Brit. Mus., xi, 1886, 334, part (Prospero, near Mazatlan;

(Manzanillo), Guerrerro (Acapulco), and Pacific slope of Oaxaca (Tapana, province of Tehuantepec).

*Molothrus xeneus* (not *Psarocolius xeneus* Wagler) CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 18, part (Manzanillo Bay, Colima).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281, part (Manzanillo Bay; mountains of Colima); Bull. U. S. Nat. Mus., no. 4, 1876, 24 (Tapana, prov. Tehuantepec, Oaxaca).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 334, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 451, part (Manzanillo Bay, etc., Colima; Tapana, Oaxaca).

[*Molothrus*] *xeneus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37, part.

*M[olothrus]* *xeneus* RIDGWAY, Man. N. Am. Birds, 1887, 367, part.

*C[allothrus]* *xeneus* RIDGWAY, Man. N. Am. Birds, 1887, 589, part; 2d ed., 1896, 600, part.

*Callothrus xeneus assimilis* NELSON, Auk, xvii, July, 1900, 266 (Acapulco, Guerrero, s. w. Mexico; coll. U. S. Nat. Mus.).

### Genus MOLOTHRUS Swainson.

*Molothrus* SWAINSON, Fauna Bor.-Am., ii, 1831, 277; App., 1, 494. (Type, *Fringilla pecoris* Gmelin, = *Oriolus ater* Boddaert.)

*Molobrus* (emendation) STERNBERG, Journ. für Orn., xvii, 1869, 125.

*Hypobletis* GLOGER, Hand-u. Hilfsb. d. Nat., 1842, 260. (Type, *Fringilla pecoris* Gmelin, = *Oriolus ater* Boddaert.)

*Cyanothrus* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Mar., 1866, 19. (Type, *Tanagra bonariensis* Gmelin.)

*Cyrtotes* REICHENBACH, Av. Syst. Nat., 1850, pl. 73. (Type, *Icterus maxillaris* Lafresnaye and D'Orbigny, = *Tanagra bonariensis* Gmelin.)

(?) *Agelaioides* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, 1866, 15. (Type, *Agelaius badius* Vieillot.)

Small, semiterrestrial, parasitic Icteridæ with short conical bill, rather long and pointed wings, and plain or uniform coloration.

Bill much shorter than head, conical, compressed, with straight or nearly straight outlines, its depth at base about equal to distance from nostril to tip of maxilla, or a little less, its basal width decidedly less; culmen straight or very slightly convex, sometimes elevated and slightly arched posteriorly, more or less flattened, especially between the nostrils; gonys straight or faintly convex, slightly shorter than distance from nostril to tip of maxilla; commissure nearly straight to near base, where deflexed to the rictus, the maxillary tomium sometimes more or less convex in middle portion. Nostril small, roundish, or oblong, with membrane above and behind, its posterior end touching feathering of frontal antiæ. Wing moderate or rather long (less than five to nearly seven times as long as culmen, three and a half to more than four times as long as tarsus), pointed; wing-tip variable in length, from less than length of culmen (in *M. badius*) to more than twice as long (in *M. rufo-axillaris*); tertials not produced;<sup>1</sup> ninth (outermost) primary longer than fifth, usually longer than sixth, sometimes

<sup>1</sup> The drawing of generic details is incorrect in showing a projection of the longest tertial.

longest; longest primaries may be the ninth, ninth and eighth, eighth and seventh, or seventh, sixth, and fifth; longer primaries usually with inner webs not appreciably sinuated, though sometimes the first and second are faintly so; in one species (*M. atronitens*) the inner webs of first four have minute angular projections, much as in *Collothrus*. Tail from two-thirds to five sixths as long as wing, even or slightly rounded. Tarsus much longer than culmen, less than one-fourth to nearly one-third as long as wing, the anterior scutella distinct; middle toe, with claw, a little shorter than tarsus; lateral toe with claws reaching about to base of middle claw; hallux slightly shorter than lateral toes, much stouter, its claws shorter than the digit; all the claws acute and strongly curved.

*Coloration.* Adult males uniform black, more or less glossy, with or without brown head and neck; adult females plain grayish or brownish (usually indistinctly streaked below), that of one species uniform black; young distinctly streaked below. (In two South American species both sexes are plain brownish gray or light brown, with wings largely rusty.)

*Range.*—Temperate and tropical America in general, except West Indies<sup>1</sup> and Central America.

With the exception of three or four species, the members of this genus agree very well with one another in structural characters, the differences being slight and immaterial. Of these aberrant species *M. rufo-ocillaris* is most different, the wing and tail being proportionally longer, the latter more rounded, and the bill rather shorter and thicker. In this species, only, the female is black, like the male.

In *M. badius* and its near relative, *M. fringillarius*, the wing is very short and rounded, exceeding the tail in length by less than the length of the culmen; the ninth primary is shorter than the fourth, the fifth being nearly if not quite equal to the longest, and the nostrils linear instead of rounded. In these two species the coloration is very different from that of any other, both sexes being light brown or brownish gray with the wings mostly cinnamon-rufous, and they are said to be nonparasitic, building their own nest and rearing their young in the usual fashion.

*M. atronitens* has the bill relatively longer and narrower than the other species, and the inner webs of the three outer primaries instead of being very faintly or not at all sinuated have an angular projection of the margin, much as in the species of *Collothrus*, but much less pronounced, and there seems also to be a slight development of the neck ruffs of that genus.

The habits of some species are scarcely, if at all known; but, while of the three species of the Argentine Republic two (*M. bonariensis* and

<sup>1</sup>A South American species (*M. bonariensis* or *M. atronitens*) is said to have been introduced into St. Thomas and Vieque.



*M. rufo-axillaris*) always lay their eggs in the nests of other birds, their habits in this respect being quite the same as those of the typical North American species (*M. ater*), the third (*M. badius*) always builds its own nest and rears its own young in the usual fashion. This fact, taken in connection with the very different proportions of the primaries and the peculiar coloration, alluded to above, may necessitate the adoption of the name *Agelaioides* Cassin for a genus containing *M. badius* and *M. fringillarius*.

## KEY TO THE SPECIES AND SUBSPECIES OF MOLOTHRUS.

a. General color glossy black.

b. Head and neck brown. (*Molothrus ater*, adult male.)

c. Larger (wing averaging 110.5, tail 75.2, culmen, from base, 18). (More southern British provinces to plateau of Mexico.)

*Molothrus ater ater*, adult male (p. 207)

α. Smaller (wing averaging 100.3, tail 68.8, culmen, from base, 16.3). (Mexico and adjacent portion of United States.)

*Molothrus ater obscurus*, adult male (p. 210)

bb. Head and neck glossy violet-black, like rest of plumage. (Guiana; Venezuela; Trinidad; Tobago; Grenada and Grenadines.)

*Molothrus atronitens*, adult male (p. 211)

aa. General color grayish or brownish. (Adult females and young.)

b. Longest primaries exceeding secondaries by much more than length of tarsus. (*Molothrus ater*, adult female.)

c. Larger (wing averaging 101.1, culmen 16.)

*Molothrus ater ater*, adult female (p. 207)

α. Smaller (wing averaging 90.7, culmen 15.)

*Molothrus ater obscurus*, adult female (p. 210)

bb. Longest primaries exceeding secondaries by not more than length of tarsus.

*Molothrus atronitens*, adult female (p. 212)

## MOLOTHRUS ATER ATER (Boddaert).

## COWBIRD.

*Adult male*.—Head, neck, and upper chest plain brown (varying from broccoli brown or drab to warm clove brown); rest of plumage glossy greenish black, the gloss usually more violet (often distinctly so) on upper back, next to brown of hindneck; bill, legs, and feet black; iris brown; length (skins), 167.6–194.3 (179.3); wing, 105.4–115.8 (110.5); tail, 70.1–80 (75.2); culmen, from base, 17.3–19.6 (18); depth of bill at base, 11.4–12.7 (12.2); tarsus, 24.1–28.2 (26.7); middle toe, 16.5–20.8 (18.5).<sup>1</sup>

*Adult female*.—Above brownish gray, faintly glossed with greenish, the feathers with darker centers and blackish shaft-streaks, especially on back; wings and tail more dusky brownish gray with paler edgings, these nearly white on longer primaries; under parts paler brownish gray or hair brown, usually more or less distinctly streaked (narrowly) with darker, the chin and throat much paler (sometimes almost

<sup>1</sup>Fourteen specimens.

dull whitish), and, together with the chest, unstreaked; maxilla brownish black or dusky brown; mandible brownish, dusky at tip; iris brown; length (skins), 154.9-180.3 (165.9); wing, 93.5-104.6 (101.1); tail, 61.7-70.4 (66.8); culmen, from base, 15.2-17 (16); depth of bill at base, 10.2-11.2 (10.9); tarsus, 24.1-26.4 (25.4); middle toe, 15.7-18.8 (17).<sup>1</sup>

*Young male*.—Above varying from dark hair brown to sooty grayish brown, the feathers with narrow pale grayish brown and whitish margins (these usually indistinct and often obsolete on pileum and hindneck), the wing-coverts and tertials more broadly and conspicuously margined with dull buffy whitish; under parts conspicuously streaked with sooty grayish brown or hair brown and dull buffy or whitish, the latter on margins or lateral edges of feathers, the darker color prevailing anteriorly; maxilla dark brownish, mandible paler; legs and feet brownish.

*Young female*.—Similar to the young male but paler, especially the under parts, which are principally dull light buffy streaked with grayish brown.

Temperate North America in general, except portions of Pacific coast; north to about 49° in more eastern portions, to 55° 30' (Little Slave Lake, etc.) in the interior; west to British Columbia (both sides of Cascade range), Washington, Oregon, Nevada, and southeastern California; south in winter to central and southeastern Mexico (Jalapa and Orizaba, Vera Cruz; Huexotitla, Puebla; Hacienda San Juan Capistrano, Zacatecas; Cozumel Island, Yucatan, etc.); breeding south to Georgia (Wayne and McIntosh counties), Louisiana (Petite Anse Island), and Texas (Harris and Bexar counties).

*Oriolus ater* BONDAERT, Tabl. Pl. Enl., 1783, 37 (based on *Troupiale, de la Caroline*, Daubenton, Pl. Enl., pl. 606, fig. 1).



- i, 1878, 130 (Fort Brown, Texas, winter resid.).—CHAMBERLAIN, Bull. i, N. H. Soc. N. B., 1882, 41 (New Brunswick, rare summer resid.).—SPELMAN, Bull. Nutt. Orn. Club, viii, 1883, 121 (Belmont, Massachusetts, Jan. 2; 2 specs.).—DAMON, Auk, ii, 1885, 309 (Lockport, w. New York, winter).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 495.—SETON, Auk, iii, 1886, 321 (w. Manitoba, summer).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 151 (Huexotitla, Puebla, Nov.).—COOKE, Bird Migr. Miss. Val., 1888, 161 (dates, etc.).—THOMPSON Proc. U. S. Nat. Mus., xiii, 1891, 571 (Manitoba).—ATTWATER, Auk, ix, 1892, 237 (San Antonio, Texas; breeding?).—BENDIRE, Rep. U. S. Nat. Mus., 1893, 590, pls. 1, 2, 3 (descr., syn., range, habits, etc.); Life Hist. N. Am. Birds, ii, 1895, 590, pl. 6, figs. 3-6.—SPAULDING, Auk, xii, 1895, 182 (Lancaster, New Hampshire, Jan. 18).—NEHRLING, Our Native Birds, etc., ii, 1896, 240, pl. 17, figs. 2, 3.—KNIGHT, Bull. 3, Univ. Maine, 1897, 86 (Maine, summer resid.).—BROOKS, Auk, xvii, 1900, 106 (British Columbia, both sides of Cascades).
- Molothrus ater* . . . *α. ater* RIDGWAY, Orn. 40th Parallel, 1877, 501 (upper Humboldt Valley, Nevada, Aug. 31; Truckee Reservation, Nevada, June; Parleys Park and Bear River valley, Utah, June).
- M[olothrus] ater* COUES, Key N. Am. Birds, 2d ed., 1884, 402.—RIDGWAY, Man. N. Am. Birds, 1887, 367.
- [*Fringilla*] *pecoris* GMELIN, Syst. Nat., i, 1788, 910 (=female; based on *Fringilla pecoris* Brisson, Orn., iii, 165, etc.).—LATHAM, Index Orn., ii, 1790, 443.
- F[ringilla] pecoris* LICHTENSTEIN, Verz. Doubl., 1823, 23.
- Emberiza pecoris* WILSON, Am. Orn., ii, 1810, 145, pl. 18, figs. 1, 2, 3.
- Passerina pecoris* VIEILLOT, Nouv. Dict. d'Hist. Nat., xxv, 1819, 22.
- Icterus pecoris* BONAPARTE, Journ. Ac. Nat. Sci. Phila., 1824; Ann. Lyc. N. Y., ii, 1828, 53.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 178.—AUDUBON, Orn. Biog., i, 1831, 493, pl. 99; v., 1839, 233, 400, pl. 424.
- Ps[arocolius] pecoris* WAGLER, Syst. Av., 1827, *Psarocolius*, sp. 30, part; Isis, 1831, 527.
- (?) *Agelaius pecoris* SWAINSON, Philos. Mag., n. s., i, 1827, 436.
- Molothrus pecoris* SWAINSON, Fauna, Bor.-Am., ii, 1831, 277.—BONAPARTE, Geog. and Comp. List, 1838, 29.—AUDUBON, Synopsis, 1839, 139; Birds Am., oct. ed., iv, 1842, 16, pl. 212.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 524; Cat. N. Am. Birds, 1859, no. 400.—SCLATER, Proc. Zool. Soc. Lond., 1859, 265 (Jalapa, Vera Cruz); Cat. Am. Birds, 1862, 134, part; Cat. Birds Brit. Mus., xi, 1886, 333, part (Cozumel I., Yucatan; Jalapa, Vera Cruz, etc.).—VERRILL, Proc. Essex Inst., iii, 1862, 151 (Oxford Co., Maine, breeding).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 17 (monogr.).—TRIPPE, Am. Nat., iii, 1869, 291 (biography).—COOPER, Orn. Cal., 1870, 257.—COUES, Check List, 1873, no. 211; Birds N. W., 1874, 180, part.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 154, part, pl. 32, figs. 6, 7.—GENTRY, Proc. Ac. Nat. Sci. Phila., 1874, 96 (habits).—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 312, part (Provo, Utah; Denver and Pueblo, Colorado).—MAYNARD, Birds E. N. Am., 1881, 131.—BICKNELL, Auk, ii, 1885, 152 (song).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 450, part.
- [*Molothrus*] *pecoris* BONAPARTE, Consp. Av., i, 1850, 436.—COUES, Key N. Am. Birds, 1872, 155.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37.
- M[olothrus] pecoris* CABANIS, Mus. Hein., i, 1851, 192.
- [*Molothrus pecoris*] *a. pecoris* COUES, Birds N. W., 1874, 180 (synonymy).
- Molobrus pecoris* SUNDEVALL, Meth. Av. Nat. Disp. Tent., 1872, 22.
- (?) [*Oriolus*] *fuscus* GMELIN, Syst. Nat., i, 1788, 393 (based on *Brown-headed Oriole* Pennant, Arct. Zool., ii, 260).

(?) [*Oriolus*] *minor* Gmelin, Syst. Nat., i, 1788, 394 (based on *Petit Troupaile noir* Buffon, Hist. Nat. des Ois., iii, 221).

*Fringilla ambigua* Nuttall, Man. Orn. U. S. and Can., i, 1832, 484 (= young).

*Icterus emberizoides* "Bosc." Daudin, Traité Orn., ii, 1800, 350 (= *Oriolus fuscus* Gmelin).

[*Molothrus pecoris*] a. Subsp. *typica* Sclater, Cat. Birds Brit. Mus., xi, 1886, 334, in list of specimens.

#### MOLOTHRUS ATER OBSCURUS (Gmelin).

##### DWARF COWBIRD.

Similar to *M. a. ater* in coloration, but decidedly smaller.

*Adult male*.—Length (skins), 152.4–180.3 (163.6); wing, 96–104.1 (100.3); tail, 61.7–72.9 (68.8); culmen, from base, 15.7–17.8 (16.3); depth of bill at base, 8.4–10.2 (9.1); tarsus, 22.9–25.4 (24.1); middle toe, 16.3–18.3 (17.5).<sup>1</sup>

*Adult female*.—Length (skins), 142.2–160 (152.4); wing, 85.6–94 (90.7); tail, 57.7–66.5 (62.2); culmen, from base, 14–15.7 (15); depth of bill at base, 9.1–10.9 (9.9); tarsus, 22.4–23.6 (22.9); middle toe, 15.2–16.8 (16).<sup>2</sup>

Greater part of Mexico, including Lower California, and contiguous portion of United States; north to southern Texas (Cameron, Lampasas, Harris, Tom Green, and Concho counties) and Arizona (Fort Whipple, Mogollon Mountains, Tucson, Riverside, etc.); south to Oaxaca (Cuicatlan, Oaxaca, Tehuantepec City, etc.), Colima (Manzanilla Bay), Jalisco (Bolaños), etc.

[*Sturnus*] *obscurus* Gmelin, Syst. Nat., i, pt. 2, 1788, 804 (based on *Sturnus nove-hispaniae* Brisson, Orn., ii, 448).

*Molothrus obscurus* Cassin, Proc. Ac. Nat. Sci. Phila., xviii, 1866, 18 (monogr.; Miraflores, Lower California; Colima and Manzanillo, w. Mexico).—Cooper,

- Molothrus pecoris* . . . var. *obscurus* COUES, Check List, 1873, no. 211a.—HENSCHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 160 (s. Arizona).
- Molothrus pecoris* var. *obscurus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, pl. 32, fig. 8.—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 280 (Mazatlan; Manzanillo Bay; habits); Bull. U. S. Nat. Mus., no. 4, 1876, 24 (Tehuantepec City, Oaxaca, Oct.).
- [*Molothrus pecoris*] b. *obscurus* COUES, Birds N. W., 1874, 180 (synonymy).
- M[olothrus] ater* var. *obscurus* COUES, Birds N. W., 1874, 180, in text.
- Molothrus ater* var. *obscurus* MERRILL, Proc. U. S. Nat. Mus., i, 1879, 130 (Fort Brown, Texas; summer resid.).
- Molothrus ater obscurus* COUES and SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 22 (Brownsville, Texas; habits).—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 396 (Lometa, Texas; habits, descr. eggs, etc.).—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 182, 218, 232; Nom. N. Am. Birds, 1881, no. 258a.—COUES, Check List, 2d ed., 1882, no. 314.—BROWN, Bull. Nutt. Orn. Club, vii, 1882, 40 (Boerne, Kendall Co., Texas, Jan., Feb.).—NEHRLING, Bull. Nutt. Orn. Club, vii, 1882, 166 (Houston, Texas, breeding).—BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 200 (Tucson and Santa Rita Mts., Arizona).—BELDING, Proc. U. S. Nat. Mus., v, 1883, 546, 547 (San José del Cabo, Lower California); vi, 1883, 343 (Guaymas, Sonora).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 495a.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 151 (Puebla, Nov.).—SCOTT, Auk, iv, 1887, 22 (Riverside, Tucson, Florence, etc., Arizona).—COOKE, Bird Migr. Miss. Val., 1888, 162 (Tom Green and Concho counties, Texas, summer).—MEARNS, Auk, vii, 1890, 257 (Mogollon Mts., Arizona, summer).—ATTWATER, Auk, ix, 1892, 237 (San Antonio, Texas).—BENDIRE, Rep. U. S. Nat. Mus., 1893, 597 (geog. range, habits, etc.); Life Hist. N. Am. Birds, ii, 1895, 441, pl. 6, figs. 7, 8.
- [*Molothrus pecoris*.] b. Subsp. *obscura* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 334, in list of specimens.
- M[olothrus] a[ter] obscurus* COUES, Key N. Am. Birds, 2d ed., 1884, 402.
- M[olothrus] ater obscurus* RIDGWAY, Man. N. Am. Birds, 1887, 367.
- (?) *Agelaius pecoris* (not *Fringilla pecoris* Gmelin?) SWAINSON, Philos. Mag., n. s., i, 1827, 436 (near City of Mexico).
- (?) *Psarocolius pecoris* WAGLER, Isis, 1831, 527 (Mexico).
- (?) *Molothrus pecoris* SCLATER, Proc. Zool. Soc. Lond., 1857, 213 (Orizaba, Vera Cruz); 1860, 252 (Orizaba); Cat. Am. Birds, 1862, 134, part (Jalapa); Ibis, 1884, 3, part (monogr.).
- Molothrus pecoris* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 333, part (City of Mexico; Mazatlan).—HEERMANN, Rep. Pacific R. R. Surv., x, pt. iv. 1859, 52 (Fort Yuma, New Mexico; Texas).—BAIRD, Rep. U. S. and Mex. Bound. Surv., ii, pt. ii, 1859, 18 (Texas; Nuevo Leon, etc.).—COUES, Proc. Ac. Nat. Sci. Phila., 1866, 90 (Fort Whipple, Arizona).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1886, 450, part (most Mexican references and localities.)
- [*Sturnus*] *junceti* LATHAM, Index Orn., ii, 1790, 326 (same basis as *S. obscurus* Gmelin).

### MOLOTHRUS ATRONITENS (Cabanis).

#### GLOSSY COWBIRD.

*Adult male*.—Head, neck, back, scapulars, and under parts as far back as flanks and upper portion of abdomen uniform silky violet-black, the gloss rather more reddish violet or purple on the breast and sides.

lesser and middle wing-coverts, rump, upper tail-coverts, lower abdomen, and anal region glossy blue-black, the first, also the upper portion of the rump, tinged with violet; wings (except smaller coverts), tail, and under tail-coverts glossy greenish black; bill, legs, and feet black; length (skins), 165.1 185.4 (172.7); wing, 93.2-98.3 (95); tail, 69.6-74.9 (71.9); culmen, from base, 17.3-18.5 (17.8); depth of bill at base, 9.7 9.9 (9.7); tarsus, 21.3-22.1 (21.6); middle toe, 19.3.<sup>1</sup>

*Adult female*.—Pileum dark grayish brown; rest of upper parts lighter grayish brown, palest (dark smoke gray or brownish mouse gray) on rump, the scapulars and interscapulars with rather distinct dusky mesial streaks; wings and tail dusky with grayish brown edgings; under parts light grayish brown (hair brown) medially, darker hair brown laterally, the chin and upper throat very pale hair brown or pale buffy grayish; bill, legs, and feet black; length (skin), 150.9; wing, 87.1; tail, 64.5; culmen, from base, 16.5; depth of bill at base, 8.9; tarsus, 19.1; middle toe, 17.3.<sup>2</sup>

Northern coast district of South America, in Guiana and Venezuela; Trinidad; Tobago; Grenadines (Curriacoa), Lesser Antilles; Vieque (near St. Thomas), Greater Antilles (introduced?).

*Molothrus atronitens* CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 682 (British Guiana).—FINSCH, Proc. Zool. Soc. Lond., 1870, 576 (Trinidad).—PELZELN, Orn. Bras., 1871, 200.—(?) BERLEPSCH, Journ. für Orn., 1873, 249 (Prov. Santa Catarina, s. Brazil).—SCLATER, Ibis, 1884, 6 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 337, excl. syn. part (Venezuela; Trinidad; Demerara, British Guiana; Oyapoc, Cayenne; Mexiana I., lower Amazon).—STONE, Auk, viii, 1891, 346 (monogr.).—CORY, Auk, x, 1893, 220 (Tobago).

*Molothrus atro-nitens* CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 36 (Trinidad).

*M[olothrus] atronitens* CABANIS, Mus. Hein., i, 1851, 193 (Cayenne?).

[*Molothrus*] *atronitens* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37.

Medium-sized or rather large semiterrestrial Icteridæ, with long, graduated, and plicate<sup>1</sup> tail; anteriorly truncated and very prominent median palatal ridge; bill about as long as head and strongly decurved at tip; color black, with various and strongly contrasted metallic (green, blue, violet, and bronze) hues.

Bill about as long as head or a little longer, elongate-conical, but upper outline decidedly convex terminally and decurved at tip, its basal depth less than one-half the length of culmen, but equal to or more than one-half the distance from nostril to tip of maxilla, the basal width a little less; culmen nearly straight (sometimes faintly depressed) in middle, convex terminally, with strongly decurved tip, elevated and usually slightly arched basally, distinctly ridged but the ridge broad and rounded; gonys straight or nearly so, sometimes faintly concave terminally, sometimes faintly convex basally, slightly shorter than maxilla from nostril; maxillary tomium slightly convex in middle, slightly concave anteriorly and subbasally, strongly deflexed from beneath nostril to rictus; mandibular tomium convex terminally, straight or slightly concave in middle, more or less convex and elevated opposite palatal ridge, then slightly deflexed for a short distance, strongly deflexed from beneath nostril to rictus. Nostril more or less triangular (obtusely pointed anteriorly), posteriorly in contact with feathering of loreal antiæ, overhung by a rather broad membranous or subcorneous operculum. Wing moderate (less than four to more than four times as long as culmen, three and a half to nearly four times as long as tarsus), the tip moderately produced (about equal in length to tarsus or intermediate between length of tarsus and length of culmen), subtruncate; ninth (outermost) primary intermediate between seventh and sixth, between sixth and fifth, or equal to fifth; eighth and seventh or eighth, seventh, and sixth primaries longest; inner web of three outer primaries slightly but distinctly sinuated, but the middle portion not conspicuously widened. Tail plicate, shorter than wing (the difference equal to about one-fourth to one-third the length of culmen), graduated for a little less than length of culmen, the rectrices (except middle pair) widest terminally and with obliquely subtruncated tips, the inner web usually a little longer than the outer. Tarsus slightly longer than culmen, with anterior scutella distinct; middle toe, with claw, decidedly shorter than tarsus; lateral toes with claws falling decidedly short of base of middle claw; hallux equal in length to lateral toes, much stouter, its claw decidedly shorter than the digit; claws only moderately curved.

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<sup>1</sup>Capable of being folded vertically so that a transverse section is V-shaped, the two edges being brought near together when flying. On account of this folding and the graduated form of the tip, the effect, when the bird is flying, is very peculiar, the tail appearing as if much longer on one side than on the other.



*Coloration.*—Blackish, with glossy sheen of various strongly contrasted metallic hues of green, blue, violet, purple, and bronze; the female smaller and less brilliant in color than the male.

*Range.*—Eastern North America. (Monotypic?)<sup>1</sup>

KEY TO THE SPECIES AND SUBSPECIES OF *QUISCALUS*.

- a. Plumage of back, scapulars, rump, and under parts of body varied with several metallic hues, dark bronzy green or purplish bronze prevailing; lesser and middle wing-coverts violet or purple, tipped with metallic blue, green, or bronze.
  - b. Larger, except bill and feet, wing of adult male averaging 143.8, tail 135.6; adult female averaging, wing 127.8, tail 112, individual variation in plumage very great. (Atlantic coast district of United States, from eastern end of Long Island Sound to South Carolina; eastern Tennessee; occasional in lower Mississippi Valley?) ..... *Quiscalus quiscula quiscula* (p. 215)
  - bb. Smaller, except bill and feet, adult male averaging, wing 133.1, tail 121.1; adult female averaging, wing 119, tail 106.2, individual variation in plumage very slight. (Peninsula of Florida and along Gulf coast to Louisiana.) ..... *Quiscalus quiscula aglaeus* (p. 217)
- aa. Plumage of back, scapulars, rump, and under parts of body perfectly uniform bronze or brassy olive, lesser and middle wing-coverts entirely bronzy purple or purplish bronze. (Whole interior of North America and whole of New England (except coast of Long Island Sound) and northward; south to Texas, west to Rocky Mountains; occasional during migration along Atlantic coast.) ..... *Quiscalus quiscula mexicanus* (p. 219)

When the real distinctive characters of *Q. q. quiscula* and *Q. q. aglaeus* are kept in mind there should not be the slightest difficulty in recognizing them as very distinct forms. In the first place, it is important to know that the color of the head, neck, and chest is not of the slightest value as a distinctive character, since it varies equally in both forms, from golden green to reddish purple. In *Q. q. quiscula*, however, the brilliant color of the head, neck, and chest, while often very sharply defined posteriorly, gives way to a color which varies from dark bronzy green to violet-purple, but always more or less broken by other metallic colors, largely in the form of bars of different hues upon the individual feathers, while the lesser and middle wing coverts are tipped with a metallic color (blue passing through green into bronze or golden terminally) conspicuously different from the violet purple of the basal portion. In *Q. q. aglaeus*, on the other hand, the brilliant color of the head, neck, and chest (whether it be violet, blue, green, or brassy) gives way at once to a golden bronze or brassy hue, which extends, absolutely unbroken by other hues, over the entire back, scapulars, rump, and under parts of the body (except chest), while the smaller wing-coverts are either wholly reddish purple or else tipped with golden bronze, never with blue nor green.

*Q. q. aglaeus* is not distinguishable as to coloration from many examples of *Q. q. quiscula*, the differences consisting in its smaller size with

<sup>1</sup>If *Q. aglaeus* be considered a subspecies of *Q. quiscula*, then the genus is monotypic; otherwise it consists of two species.



relatively larger bill and feet; but while *Q. q. quiscula* is so excessively variable in coloration that scarcely two specimens are exactly alike, *Q. q. aglæus* is remarkably uniform, and the general color of the back, scapulars, and under parts is always a dark bronzy green, this color being rather the exception in *Q. q. quiscula*, in which more purplish hues prevail.

On account of the very slight individual variation of color in *Q. q. aglæus* and *Q. q. æneus* and the excessive variability of *Q. q. quiscula*, together with the remarkable geographic distribution of the three forms, which does not in the least conform to faunal areas,<sup>1</sup> Mr. Chapman has suggested,<sup>2</sup> and well-nigh proven, that *Q. quiscula* and *Q. æneus* are distinct species, which interbreed in the district where their breeding ranges come together, the former being of "pure blood" chiefly in the form known as *Q. q. aglæus*, *Q. q. quiscula* being chiefly a hybrid form. My own opinion in the matter exactly coincides with Mr. Chapman's; but since so many forms now ranked as subspecies are similarly involved I prefer, at present, to leave the question in abeyance.

#### QUISCALUS QUISCULA QUISCULA (Linnæus).

##### PURPLE GRACKLE.

*Adult male*.—Head, neck, and chest varying in color from metallic reddish violet to golden green<sup>3</sup>; prevailing color of back and scapulars varying from bronzy purple or polished bronze to metallic olive-green or bottle green, but this always more or less broken by bars (mostly concealed, except on scapulars) of metallic green, blue, bronze, or purple (or all these tints); rump varying in color from purplish bronze to violet, the color usually more or less broken by admixture of other metallic hues; prevailing color of wings violet or purple (the primaries, primary-coverts, and alula usually more bluish, sometimes bluish green); the lesser and middle coverts usually banded, more or less conspicuously, with purple, blue, green, golden, etc.; tail dark purple, violet, blue, or green, or (in worn or faded plumage) black glossed with one of these colors; under parts (posterior to chest) metallic purple, violet, blue, green, etc., the color varying in different parts, sometimes mixed with golden bronze; bill, legs, and feet black; iris pale yellow or yellowish white; length (skins), 275.6–299.7

<sup>1</sup>*Q. q. æneus* breeds from southern Texas to the Saskatchewan and Nova Scotia, and does not vary in coloration throughout this enormous extent of territory.

<sup>2</sup>Bull. Am. Mus. Nat. Hist., iv, no. 1, 1892, pp. 1–20. This article of Mr. Chapman's is a most excellent one, and discusses the question of the relationship of the three forms with a detail which is impossible here. It should be carefully read by those who desire further information on the subject.

<sup>3</sup>Whatever the general color of the head, neck, and chest, the anterior portion of the head is usually more bluish than the posterior portion, but occasionally the neck and chest are bluer than the head; the color is rarely, if ever, uniform throughout.

(285.2); wing, 137.7-146.8 (143.8); tail, 129.5-139.7 (135.6); culmen, from base, 32.5-36.3 (33.8); depth of bill at base, 12.2-13.7 (13); tarsus, 34.3-38.4 (36.6); middle toe, 25.1-26.7 (25.7).<sup>1</sup>

*Adult female*.—Decidedly smaller than the male and much duller in color, the metallic hues more subdued, sometimes very faint; length (skins), 236.2-256.5 (251.7); wing, 122.4-133.9 (127.8); tail, 101.6-122.7 (112); culmen, from base, 27.9-30.2 (29.2); depth of bill at base, 11.9-13 (12.4); tarsus, 32.8-36.1 (34.3); middle toe, 22.1-25.4 (23.4).<sup>1</sup>

*Young*.—Uniform sooty, rather paler below, where sometimes showing indistinct streaks of darker.

Atlantic coast district of United States, east of Alleghenies; north to lower Hudson Valley and northern shores of Long Island Sound; breeding south to uplands of Alabama (Greensboro, Anniston, Coosada, etc.), Georgia, and the Carolinas, to Virginia (?) along the coast; occasional on western side of Alleghenies, in eastern Tennessee (Roane County, March, April).

[*Gracula*] *quiscula* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 109 (based on *Monecula purpurea* Catesby, Nat. Hist. Carolina, i, 12, etc., "America septentrionale"); ed. 12, i, 1766, 165.—GÜELIN, Syst. Nat., i, 1788, 397.—LATHAM, Index Orn., i, 1790, 191.

*Gracula quiscula* WILSON, Am. Orn., iii, 1811, 44, pl. 21, fig. 4.

*Ch[alcophanes]* *quiscalus* CAHANIS, Mus. Hein., i, 1851, 196.

*Sturnus quiscula* DAUDIN, Traité d'Orn., ii, 1800, 316.

*Q[uisculus]* *quiscula* JORDAN, Man. Vert. E. N. Am., 4th ed., 1884, 93.

*Quiscalus quiscula* AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 511.—

Fox, Auk, iii, 1886, 318 (Roane Co., Tennessee, Mar., Apr.—BREWSTER, Auk, vii, 1890, 208 (Charleston, South Carolina, 1 spec. Nov. 30).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 3 (descr.; geog. range; crit.).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 497, pl. 7, figs. 21-23.—YOUNG, Auk, xiii, 1896, 283 (Hazleton, Pottsville, and Nescopeck, Pennsylvania, breeding).

*Q[uiscalus] purpuratus* BONAPARTE, Consp. Av., i, 1850, 424.

*Quiscalus purpureus* (not of Woodhouse, 1853) CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 403, part (ex *Gracula purpurea* Bartram, Trav. Florida, 1791, 290, = *nomen nudum*).—RIDGWAY, Proc. Ac. Nat. Sci. Phila., 1869, 133 (crit.); Proc. U. S. Nat. Mus., iii, 1880, 183, 278; Nom. N. Am. Birds, 1881, no. 278.—COUES, Check List, 1873, no. 225, part; 2d ed., 1882, no. 335; Birds N. W. 1874, 203, part (in synonymy).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 214, part, pl. 37, fig. 1.—MERRIAM, Trans. Conn. Acad., iv, 1877, 46 (Connecticut, summer resid.).—MAYNARD, Birds E. N. Am., 1881, 148 part.—WARREN, Rep. Penn. Board Agric. for 1883, 214–217 (habits, food, etc.).

[*Quiscalus*] *purpureus* COUES, Key N. Am. Birds, 1872, 160, part.

*Q[uiscalus] purpureus* COUES, Key N. Am. Birds, 2d ed., 1884, 413.

[*Quiscalus purpureus*] var. *purpureus* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, ii, 1874, 213.

[*Quiscalus purpureus*.] Var. *purpureus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 215.

[*Quiscalus purpureus*] a. *purpureus* COUES, Birds, N. W., 1874, 203 (synonymy).

(?) *Quiscalus purpureus* var. *aglaeus* (not *Quiscalus aglaeus*, Baird?) BROWN, Bull. Nutt. Orn. Club, iv, 1879, 10 (Coosada, Alabama, resident).

*Q[uiscalus] versicolor typicus* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 394, in text.

[*Quiscalus versicolor*] a. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 395, in list of specimens (Pennsylvania; Maryland; Virginia).

### QUISCALUS QUISCULA AGLÆUS (Baird).

#### FLORIDA GRACKLE.

Similar to *Q. q. quiscula*, but decidedly smaller (except bill and feet), and coloration far less variable; adult male with color of head, neck, and chest varying from dark purplish bronze to violet (the head usually more bluish); back, scapulars, and sides of breast dark olive-green or dull bottle green, often nearly uniform, but always with at least concealed bars of other metallic hues; rump varying from purplish bronze to violet, usually more or less spotted with steel blue, bronze, etc.; abdomen and under tail-coverts dark violet, sometimes mixed with dark blue; prevailing color of wings varying from violet-purple to steel blue (the color most pronounced on greater coverts and secondaries), the middle and lesser coverts more or less barred with various metallic hues (as in *Q. q. quiscula*).

*Adult male*.—Length (skins), 276.9–297.2 (285.2); wing, 129–135.9 (133.1); tail, 116.1–128.5 (121.2); culmen, from base, 31–35.1 (33.3); depth of bill at base, 11.7–13.2 (13); tarsus, 35.6–37.3 (36.6); middle toe, 24.4–26.7 (25.4).<sup>1</sup>

*Adult female*.—Length (skins), 233.7–261.6 (250.2); wing, 116.6–124.5 (119.1); tail, 100.8–111 (106.2); culmen, from base, 29.2–31.2 (30.2);

<sup>1</sup> Ten specimens.

depth of bill at base, 10.7–13 (11.9); tarsus, 33.3–34.8 (33.8); middle toe, 21.8–23.6 (22.9).<sup>1</sup>

Peninsula of Florida, along the Gulf coast to Louisiana (Mandeville, New Orleans, St. James Parish, Jefferson Parish, West Baton Rouge Parish, etc.), and along the more southern Atlantic coast to South Carolina (to Virginia?).<sup>2</sup>

(?) [*Oriolus*] *ludovicianus* Gmelin, Syst. Nat., i, 1788, 387 (based on *Cassique, de la Louisiane*, Daubenton, Pl. Enl. pl. 646; = albinotic specimen, probably of this form).

(?) *Ch[alcophanes] purpuratus* (not *Quiscalus purpuratus* Swainson?) Cabanis, Mus. Hein., i, Sept. 1851, 196 (Georgia).

*Quiscalus baritus* (not *Gracula barita* Linnaeus) Baird, Rep. Pacific R. R. Surv., ix, 1858, 556 (Key Biscayne and Cape Florida, s. Florida), 925 (Indian Key, s. Florida); ed. 1860 (Birds N. Am.), atlas, pl. 32; Cat. N. Am. Birds, 1859, no. 422.

*Quiscalus versicolor* (not of Vieillot) Audubon, Synopsis, 1839, 146, part.—Taylor, Ibis, 1862; 129 (Florida).—Sclater, Cat. Birds Brit. Mus., xi, 1886, 394, part.

*Quiscalus aglaeus* Baird, Am. Jour. Sci. and Arts, ser. 2, xli, 1866, 84 (s. Florida; coll. U. S. Nat. Mus.).—Cassin, Proc. Ac. Nat. Sci. Phila., 1866, 404 (monogr.).—Ridgway, Proc. Ac. Nat. Sci. Phila., 1869, 135 (crit.).—Baird, Brewer, and Ridgway, Hist. N. Am. Birds, ii, 1874, pl. 37, fig. 2.

[*Quiscalus purpureus*.] Var. *aglaeus* Coues, Key N. Am. Birds, 1872, 161.

*Quiscalus purpureus* . . . var. *aglaeus* Coues, Check List, 1873, no. 225a.

[*Quiscalus purpureus*] var. *agelaius* Ridgway, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, ii, 1874, 203.

[*Quiscalus purpureus*] Var. *aglaeus* Baird, Brewer, and Ridgway, Hist. N. Am. Birds, ii, 1874, 221.

[*Quiscalus purpureus*] c. *aglaeus* Coues, Birds N. W., 1874, 203 (synonymy).

*Quiscalus purpureus aglaeus* Ridgway, Proc. U. S. Nat. Mus., iii, Aug. 24, 1880,

1888, 174 (New Orleans).—SCOTT, Auk, vi, 1889, 321 (Tarpon Springs, Punta Rassa, upper Caloosahatchie R., and Key West, s. Florida, breeding).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 5 (descr.; crit.).—WAYNE, Auk, xii, 1895, 365 (Wacissa R., n. w. Florida, breeding).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 500, pl. 7, figs. 24, 25.—BEYER, Proc. Louis. Soc. Nat., for 1897-'99 (1900), 106 (Louisiana, breeding).

*Q[uisculus] quiscula aglæus* RIDGWAY, Man. N. Am. Birds, 1887, 380.

(?) *Quiscalus quiscula* (not *Gracula quiscula* Linnæus?) COOKE, Bird Migr. Miss. Val., 1888, 174 (West Baton Rouge Parish, Louisiana, breeding).—BEYER, Proc. Louis. Soc. Nat. for 1897-'99 (1900), 106 (breeding in Baton Rouge and St. Tammany Parishes, Louisiana).

*Q[uisculus] p[urpureus] aglæus* COUES, Key N. Am. Birds, 2d ed., 1884, 414.

*Quiscalus versicolor aglæus* SCLATER, Ibis, 5th ser., ii, 1884, 154 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 394, in text.

*Quiscalus purpureus* (not of Woodhouse, 1853) ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 291, excl. syn. part (e. Florida; crit.).—(?) LANGDON, Journ. Cinc. Soc. N. A., 1881, 150 (West Baton Rouge, Louisiana, breeding).—MAYNARD, Birds E. N. Am. 1881, 148, part.

### QUISCALUS QUISCULA ÆNEUS Ridgway.

#### BRONZED GRACKLE.

Differing from both *Q. q. quiscula* and *Q. q. aglæus* in the perfectly uniform bronze color of the entire body (except chest), and wholly unbarred bronze or purplish bronze wing-coverts; about the size of the former.

*Adult male*.—Head, neck, and chest varying in color from greenish blue to purple, the neck and chest sometimes brassy green; rest of the plumage perfectly uniform bronze or brassy olive, becoming more purplish on wings and tail; the lesser wing-coverts uniform brassy olive or bronze, and neither these nor the middle coverts ever marked with bars of other metallic tints; length (skins), 276.9–317.5 (297.7); wing, 136.7–153.2 (134.9); culmen, from base, 30.7–33.5 (32.3); depth of bill at base, 12.7–14 (13); tarsus, 35.6–37.8 (36.8); middle toe, 24.1–26.9 (25.4).<sup>1</sup>

*Adult female*.—Similar to the male, but decidedly smaller and much duller in color; length (skins), 235–269.2 (254.8); wing, 122.7–131.6 (126.5); tail, 105.7–113.3 (110.7); culmen, from base, 28.7–31.2 (29.7); depth of bill at base, 11.2–12.7 (11.9); tarsus, 31.5–34.8 (33.8); middle toe, 22.6–23.9 (23.1).<sup>2</sup>

Temperate North America east of Rocky Mountains, except Atlantic coast district from shores of Long Island Sound southward and the Gulf coast from Florida to Louisiana; breeding from Massachusetts,<sup>3</sup> New

<sup>1</sup> Ten specimens.

<sup>2</sup> Eight specimens.

<sup>3</sup> Many, if not all, specimens from the coast of Massachusetts are more or less intermediate between this form and the true *Q. quiscula*, the breeding range of which there adjoins that of *Q. q. æneus*.

York,<sup>1</sup> western Pennsylvania, the Ohio Valley (including western West Virginia and greater portion of Kentucky and Tennessee), central Alabama (?), northern Mississippi and Louisiana, Texas (Bexar, Cook, Navarro, and Harris (?) counties), northward to New Brunswick, Nova Scotia, southern Newfoundland, southern Labrador, Great Slave Lake, and Prince Albert, Northwest Territory; west to base of Rocky Mountains in eastern New Mexico, Colorado, Wyoming (west to Fort Bridger), Montana, etc. During migrations, an occasional straggler to the Atlantic coast district from Maryland southward.

*Quiscalus versicolor* (not of Vieillot) AUDUBON, Orn. Biog., i, 1831, 35, part, pl. 7; v, 1839, 481, part; Synopsis, 1839, 146, part; Birds Am., oct. ed., iv, 1842, 58, part, pl. 221.—SWAINSON, Fauna Bor.-Am., ii, 1831, 285.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 194, part.—HAYMOND, Proc. Ac. Nat. Sci. Phila., 1856, 291 (Franklin Co., Indiana).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 555, part (Iowa; Red R., Manitoba; localities in Nebraska, Kansas, etc.), 927 (Fort Bridger, Wyoming); Cat. N. Am. Birds, 1859, no. 421, part.—WILLIS, Smithsonian Rep. for 1858 (1859), 283 (Nova Scotia).—VERRILL, Proc. Essex Inst., iii, 1862, 151 (Oxford Co., Maine, breeding).—BLAKISTON, Ibis, 1862, 7 (Forks of Saskatchewan); 1863, 83 (bet. Lake Winnipeg and Hudson Bay).—SAMUELS, Birds New Engl., 1864, 10.—COUES, Proc. Essex Inst., v, 1868, 285 (Lynn, Massachusetts).—SNOW, Birds Kansas, 1873, 8.—MAYNARD, Proc. Bost. Soc. N. H., xiv, 1878, 375 (Maine; New Hampshire; Massachusetts).—SCLATER, Ibis, 1884, 154, part (monogr.); Cat. Birds Brit. Mus., xi, 1886, 394, part.

(?) *Ch[alcophanes] versicolor* CABANIS, Mus. Hein., i, Sept., 1851, 196.

*Quiscalus purpureus* WOODHOUSE, in Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 79 (Indian Territory; Texas; New Mexico; "California").—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 403, part (ex *Gracula purpurea* Bartram, = *nomen nudum*).—COUES, Check List, 1873, no. 225, part; Birds N. W., 1874, 203, part.—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 128 (e. Kansas), 138 (Fort Hays, w. Kansas); Proc. Bost. Soc. N. H., xvii, 1874, 61 (Fort Rice, North Dakota, southern Texas, New Mexico, and Yellowstone Park, Mont.

- Q[uiscalus] purpureus* NELSON, Bull. Essex Inst., ix, 1877, 62 (Union Co., Illinois).  
—BOIES, Cat. Birds S. Mich., 1875, no. 94.
- Quiscalus æneus* RIDGWAY, Proc. Ac. Nat. Sci. Phila., xxi, June, 1869, 134 (Mount Carmel, Wabash Co., s. e. Illinois; coll. U. S. Nat. Mus.).—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 442 (New England).—JOUY, Field and Forest, ii, 1877, 156 (District Columbia, casual).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 3 (descr.; geog. range; crit.).—BRIMLEY, Auk, xi, 1894, 333 (Raleigh, North Carolina, 2 specs., Nov. 14).
- [*Quiscalus purpureus*] var. *æneus* BAIRD, BREWER, and RIDGWAY Hist. N. Am. Birds, ii, 1874, 203.
- [*Quiscalus purpureus*.] Var. *æneus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 218.
- [*Quiscalus purpureus*] b. *æneus* COUES, Birds N. W., 1874, 203, in synonymy.
- Quiscalus purpureus*, var. *æneus* RIDGWAY, Bull. Essex Inst., v, Nov., 1873, 170, in text (Fort Bridger, Wyoming), 184, 192 (Colorado).
- Q[uiscalus] purpureus*, var. *æneus* NELSON, Bull. Essex Inst., viii, 1876, 112 (n. e. Illinois, summer res.).
- Quiscalus purpureus* . . . var. *æneus* HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 65 (Denver, Colorado, May 14). BREWSTER, Ann. Lyc. N. Y., xi, 1875, 142 (Ritchie Co., West Virginia, breeding).
- Quiscalus purpureus* . . . var. *æneus* HENSHAW, Zool. Exp. W. 100th Merid., 1875, 324 (Denver).
- Quiscalus purpureus æneus* COUES, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 606 (Pembina, North Dakota, to Rocky Mts.); Check List., 2d ed., 1882, no. 336.—ROBERTS and BENNER, Bull. Nutt. Orn. Club, v, Jan. 1880, 15 (Grant and Traverse counties, Minnesota, breeding).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 278b.—LANGDON, Journ., Cinc. Soc. N. H., 1880, 125 (Brookville, Indiana, Dec., Jan., Feb.).—BREWSTER, Bull. Nutt. Orn. Club, vi, 1881, 181 (carnivorous habits).—BATCHELDER, Bull. Nutt. Orn. Club, vii, 1882, 149 (upper St. Johns R., Maine and New Brunswick, breeding).—NEHRLING, Bull. Nutt. Orn. Club, vii, 1882, 167 (Houston, Texas, breeding abundantly).—CHAMBERLAIN, Bull. no. 1, Nat. Hist. Soc. New Bruns., 1882, 42 (New Brunswick, summer resident).
- Q[uiscalus] p[urpureus] æneus* COUES, Key N. Am. Birds, 2d ed., 1884, 413.
- Q[uiscalus] versicolor*, var. *æneus* RIDGWAY, Ann. Lyc. N. Y., x, Jan., 1874, 375 (Illinois).
- Quiscalus versicolor æneus* RIDGWAY, Proc. U. S. Nat. Mus., iii, Sept. 4, 1880, 218.—SCLATER, Ibis, 1884, 154.
- Quiscalus quiscula æneus* STEJNEGER, Auk, ii, Jan., 1885, 43, footnote.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 511b.—FOX, Auk, iii, 1886, 319 (Roane Co., e. Tennessee).—LLOYD, Auk, iv, 1887, 291 (Tom Green and Concho counties, Texas, not breeding).—BECKHAM, Auk, iv, 1887, 302 (Bayou Sara, Louisiana, Apr.); Proc. U. S. Nat. Mus., x, 1888, 672 (San Antonio and Beeville, Texas, winter).—LOOMIS, Auk, v, 1888, 113 (Chester Co., South Carolina, 2 specimens, Nov.); viii, 1891, 167 (do., Nov. 1 to Feb.).—COOKE, Bird Migr. Miss. Val., 1888, 174 (wintering regularly n. to s. Illinois, occasionally to Minnesota; dates, etc.).—RIDGWAY, Orn. Illinois, i, 1889, 326.—CLARKE, Auk, vii, 1890, 322 (Fort Churchill, Hudson Bay).—PALMER (W.), Proc. U. S. Nat. Mus., xiii, 1890, 263 (St. Johns, Newfoundland).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 582 (Manitoba; habits).—ATTWATER, Auk, ix, 1892, 238 (San Antonio, Texas, breeding).—RHODES, Proc. Ac. Nat. Sci. Phila., 1892, 109 (San Antonio, breeding).—NUTTING, Bull. Lab. N. H. Univ. Iowa, ii, 1893, 274 (Grand Rapids and Chemawawin,



lower Saskatchewan, very abundant). DWIGHT, Auk, x, 1893, 10 (Prince Edward I., breeding). TODD, Auk, x, 1893, 39 (Indiana and Clearfield counties, w. Pennsylvania, breeding). —BRIMLEY, Auk, x, 1893, 242 (Buncombe Co., North Carolina, Mar. 16, Raleigh, Nov. 26). —DEACON, Biol. Rev. Ontario, x, 1894, 69 (Prince Albert, Northwest Territory, very abt., breeding, descr. nest and eggs). THORNTON, Auk, xii, 1895, 216 (Fort Keogh, Montana, breeding). PIERCE, Trans. Nova Scot. Inst. Sci., ser. 2, i, 1895, 407 (Nova Scotia, rare). —BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 501, pl. 7, figs. 26, 27 (eggs). —BAILY, Auk, xiii, 1896, 294 (Elk Co., w. Pennsylvania, breeding). —COOKE, Birds Col., 1897, 95 (Colorado, summer resid. e. of mts.). RIVES, Auk, xv, 1898, 135 (Spruce belt, West Virginia). —BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 106 (breeding near Madisonville, St. Tammany Parish, Louisiana).

*Q[uscalus] quiscala cinereus* RIDGWAY, Man. N. Am. Birds, 1887, 380.

[*Quiscalus versicolor*] D. SUBSP. *cinereus* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 395, in list of specimens (Pembina, Dakota; Fort Dufferin, and Fort Simpson, Brit. America; "Arctic America").

*Quiscalus quiscala* (not *Gracula quiscala* Linnæus) BRITTON and COX, Auk, v, 1889, 117 (Restigouche Valley, New Brunswick). —HATCH, Birds Minnesota, 1892, 288. NEHRLING, Our Native Birds, etc., ii, 1896, 304, part, pl. 17, fig. 6.

#### Genus HOLOQUISCALUS Cassin.

(?) *Scaphidurus* (not of Swainson, 1827) SWAINSON, Fauna Bor.-Am., ii, 1831, App. 1, 494. (Type, "*Ornolanius niger* Auct.," i. e., of Boddaert?).<sup>1</sup>

*Holoquiscalus* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 404. (Type, *Gracula barata* Linnæus, = *Sturnus jamaicensis* Daudin?).

Medium sized or rather small semiterrestrial Icteridæ with plicate tail<sup>2</sup> (decidedly shorter than wing and graduated for much less than one-third, usually less than one-fourth, its length), and with the median palatal ridge beveled off anteriorly.

Bill about as long as head, elongate-conical, with tip more or less decurved, its depth at base much less than one-half the exposed culmen, little if any more (usually slightly less) than half the distance from nostril to tip of maxilla, its basal width a little less; culmen nearly straight to near tip, where more or less strongly decurved, the basal portion sometimes slightly elevated and arched; the culmen ridged, the ridge narrow but rounded; gonys nearly straight, slightly but decidedly shorter than maxilla from nostril; maxillary tomium more

<sup>1</sup> The characters given apply only in part to this genus. This citation of *Scaphidurus* Swainson is placed by Sclater (Cat. Birds Brit. Mus., xi, 1886, p. 329) under *Cassidix*, but while the description of the bill in Swainson's diagnosis applies well enough to *Cassidix*, the phrase "tail graduated, boat-shaped," certainly does not, but evidently does to a member of the *Quiscaline* group.

<sup>2</sup> In *H. gambelii* at least, the tail is said to be "permanently keeled, that is, is wedge-shaped even when the bird is at rest. In flying it is expanded vertically, and measures 4 to 5 inches in depth at the tip. This gives them a most ludicrous appearance, which is heightened by their fluttering, labored flight. Indeed, when on the wing they resemble miniature flying machines." (Chapman, Bull. Am. Mus., iv, 1892, p. 306.)



or less concave terminally, straight or slightly convex in middle, slightly but sometimes rather abruptly deflexed for the rictal portion; mandibular tomium straight in middle portion, more or less decurved or convex terminally, more or less strongly deflexed basally; median palatal ridge beveled anteriorly (as in *Megaquiscalus*). Nostril rather large, broadly ovoid, obtusely pointed anteriorly, posteriorly in contact with feathering of the loreal antiae, overhung by a broad and distinct membranous or subcorneous operculum. Wing moderate (a little less to a little more than four times as long as culmen, about three and one-fourth to three and three-fourths times as long as tarsus), its tip moderately produced (by less than two-thirds to nearly as long as culmen), rounded; ninth (outermost) primary intermediate between sixth and fifth or between fifth and fourth, the eighth and seventh or seventh and sixth longest; three or four outer primaries with inner webs distinctly emarginated and very broad anterior to the emargination. Tail decidedly shorter than wing (about equal to distance from bend of wing to end of longest secondaries), plicate (as in *Quiscalus* and *Megaquiscalus*), moderately graduated (graduation less than length of culmen and little, if any, more than one-fourth the length of middle rectrices), the inner webs not longer than the outer. Tarsus decidedly longer than culmen, its anterior scutella distinct; middle toe, with claw, equal to or shorter (sometimes decidedly shorter) than tarsus; lateral toes with claws falling decidedly short of base of middle claw; hallux equal in length to lateral toes, much stouter, its claw decidedly shorter than the digit; claws moderately to rather strongly curved, acute.

*Coloration*.—Adult males entirely glossy black (the gloss violet or bluish, more greenish on wings and tail); adult females similar to males in species of the Greater Antilles, more or less different (more brownish, often quite pale below) in species of the Lesser Antilles and northern South America.

*Range*.—West Indies; northern coast of South America.

This mainly West Indian genus, being definable by structural characters, seems sufficiently distinct from both *Quiscalus* and *Megaquiscalus* to warrant its recognition. From *Quiscalus* it differs conspicuously in the form of the median palatal ridge, which, instead of being highest, truncate, and angular anteriorly, is slanted or beveled off anteriorly and highest in the middle, as in *Megaquiscalus*; straighter commissure; inner webs of primaries much broader in middle portion (except in South American species); the middle toe and claw as long as the tarsus (in typical species) instead of decidedly shorter; besides which the adult males are plain blue-black or violet-black, and the females, in some species, very differently colored from the males. In respect to the shape of the palatal ridge, the narrower bill with straighter commissure, and the uniform blue or violet-black coloration

and (except in some species) very different coloration of the sexes, there is greater resemblance to *Megaquiscalus* than to *Quiscalus*, but the points of difference from the former are sufficiently numerous. The tail is relatively shorter and far less graduated than in *Megaquiscalus*, the difference in length between lateral and median rectrices amounting to little, if any, more (usually less) than one-fourth of the length of the middle rectrices, instead of between one-third and one-half their length; the tarsus is shorter compared with the middle toe; the inner webs of the primaries much broader in the middle or just beyond the middle portion, the eighth, seventh, sixth, and fifth having their inner webs much broader at that portion immediately preceding the situation.<sup>1</sup>

On the whole, *Holoquiscalus* may be considered as a fairly well characterized genus, in some respects intermediate in structure between *Quiscalus* and *Megaquiscalus*, but much nearer to the latter, and nearly connected with it by the more or less intermediate southern species of the two groups (*H. lugubris*, *H. insularis*, and *M. nicaraguensis*).

#### KEY TO THE SPECIES OF HOLOQUISCALUS.

- a. Color uniform black (with or without violet, bluish, or greenish gloss).
- b. Wing more than 109 mm. (or else culmen, from base, more than 27.9).
- c. Wing not less than 147.
- d. Head, neck, and body distinctly glossed with violet, the wings and tail with bluish green; bill strongly decurved at tip.
- e. Culmen, from base, 35.6-40.6 (averaging 37.3), the bill more slender; violet gloss more distinct. (Cuba.)  
*Holoquiscalus gundlachii*, adult male (p. 226)
- f. Culmen, from base, 33-35.6 (averaging 34.5), the bill stouter; violet gloss less distinct. (Jamaica.) *Holoquiscalus jamaicensis*, adult male (p. 227)
- g. Head, neck, and body with very faint or scarcely perceptible violet gloss.

- j.* Wing not less than 129.5 (129.5–134.6).  
*g.* Head, neck, and body glossed with violet or purplish violet; wings very faintly glossed with greenish; tip of bill more decurved. (Porto Rico.) . . . . . ***Holoquiscalus brachypterus***, adult male (p. 228)  
*gg.* Head, neck, and body glossed with violet-bluish; wings strongly glossed with greenish; tip of bill less decurved. (Grand Cayman.)  
***Holoquiscalus caymanensis***, adult male (p. 229)  
*ff.* Wing less than 129.5 (117.6–127.5).  
*g.* Culmen, from base, more than 33 (35.6 or more). (Grenada.)  
***Holoquiscalus luminosus***, adult male (p. 232)  
*gg.* Culmen, from base, less than 33.  
*h.* Wing more than 116.8.  
*i.* Larger (wing averaging 126, tail 107, culmen 30.9). (Santa Lucia.)  
***Holoquiscalus inflexirostris***, adult male (p. 230)  
*ii.* Smaller (wing averaging not more than 121.9, tail 98.3, or culmen 30.2).  
*j.* Bill relatively thicker, less decurved terminally.  
*k.* Wing averaging 120.7. (Martinique.)  
***Holoquiscalus martinicensis***,<sup>1</sup> adult male (p. 231)  
*kk.* Wing averaging 121.9. (Guadeloupe.)  
***Holoquiscalus guadeloupensis***, adult male (p. 232)  
*jj.* Bill relatively more slender, more decurved terminally. (Margarita Island, Venezuela.)  
***Holoquiscalus insularis***, adult male (extralimital)<sup>2</sup>  
*hh.* Wing less than 116.8.  
*i.* Wing more than 109.2 (110.2–115.6); bill more slender (depth at base, 9.6–9.9). (Coast of Venezuela; Guiana; Trinidad; Tobago.)  
***Holoquiscalus lugubris***, adult male (extralimital)<sup>3</sup>  
*ii.* Wing less than 109.2 (104.4–109); bill stouter (depth at base, 10.9–11.7.) (Barbados.)  
***Holoquiscalus fortirostris***, adult male (p. 229)  
*ee.* Wings (except edges of primaries) glossed with purple or violet; culmen very slightly decurved at tip. (Habitat unknown.)  
***Holoquiscalus rectirostris***, adult male (p. 233)  
*aa.* Color not uniform black; if approaching black the color sooty and not at all glossed.  
*b.* Sooty black.  
*c.* Wing 91.4–100.6, tail 76–78.7; bill very stout, its depth at base 9.9–11.4.  
***Holoquiscalus fortirostris***, adult female (p. 230)  
*cc.* Wing 99.1, tail 79.7; bill slender, its depth at base 8.6.  
***Holoquiscalus lugubris***, adult female (extralimital)<sup>3</sup>  
*bb.* Grayish brown above (paler anteriorly); beneath lighter brownish gray.  
*c.* Under parts deep grayish brown, becoming light brownish gray on throat.  
*d.* Smaller, with more slender bill (wing 102.1, tail 80.3, culmen, from base, 27.9, depth of bill at base 6.1)  
***Holoquiscalus insularis***, adult female (extralimital)<sup>3</sup>

<sup>1</sup> Although referred by most authors to *H. inflexirostris*, the Martinique bird is so much more like that of Guadeloupe that its separation from the latter may not prove expedient.

<sup>2</sup> *Quiscalus insularis* Richmond, Proc. U. S. Nat. Mus., xviii, Aug. 12, 1896, 675 (Margarita Island, Venezuela; coll. U. S. Nat. Mus.).—*Holoquiscalus insularis* Ridgway, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

<sup>3</sup> *Quiscalus lugubris* Swainson, Anim. in Menag., 1838, 299, fig. 54c ("Brazil").—*Holoquiscalus lugubris* Ridgway, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

- dd. Larger, with stouter bill (wing 104.1, tail 88.9, culmen, from base, 30.2, depth of bill at base 9.9). . . *Holoquiscalus lustratus*, adult female (p. 232)
- cc. Under parts light grayish brown, becoming buffy or whitish on throat.
- d. Paler superciliary and malar stripes indistinct; throat pale broccoli brown. . . *Holoquiscalus inflexirostris*, adult female (p. 230)
- dd. Paler superciliary and malar stripes very distinct; throat pale grayish buffy or whitish.
- e. Smaller, with larger feet and more slender bill<sup>1</sup> (wing averaging 105.4, tarsus 32.3, middle toe, 23.4, depth of bill at base 9.4). . . *Holoquiscalus martinicensis*, adult female (p. 231)
- ee. Larger, with smaller feet and stouter bill<sup>1</sup> (wing averaging 106.7, tarsus 31.7, middle toe 22.9, depth of bill at base 10.2). . . *Holoquiscalus guadeloupensis*, adult female (p. 232)

#### HOLOQUISCALUS GUNDLACHII (Cassin).

##### CUBAN GRACKLE.

*Adult male*.—Head, neck, body, and smaller wing-coverts uniform glossy violet-black, the gloss becoming more blue on tail-coverts; wings and tail black, the larger wing-coverts and secondaries strongly glossed with bluish green, the primaries and rectrices more faintly glossed with the same; bill, legs, and feet black; iris brown<sup>2</sup>; length (skins), 279.4–288.3 (283.2); wing, 148.6–154.9 (150.6); tail, 124.7–132.6 (129.3); culmen, from base, 35.6–41.4 (37.3); depth of bill at base, 12.2–12.7 (12.4); tarsus, 38.6–41.4 (39.9); middle toe, 28.5–30 (29.2).<sup>3</sup>

*Adult female*.—Similar to the male, but decidedly smaller, the gloss to the plumage less pronounced and bluish rather than violet; length (skins), 231.1–264.2 (252.2); wing, 118.9–133.4 (127); tail, 99.1–116.8 (108.5); culmen, from base, 32.5–32.8 (32.5); depth of bill at base, 10.9–11.7 (11.4); tarsus, 33.5–36.6 (35.3); middle toe, 22.9–25.1 (24.4).<sup>4</sup>

Island of Cuba, Greater Antilles, including adjacent islands of Little

[*Quiscalus*] *gundlachii* GRAY, Hand-list, ii, 1870, 38, no. 6527.

*Quiscalus gundlachi* SCLATER, Ibis, 1884, 159 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 398 (San Cristobal, Cuba).—CORY, Auk, vi, 1888, 31 (Cayman Brac); Cat. W. I. Birds, 1892, 15, iii, 129, 147 (Cuba; Little Cayman; Cayman Brac).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 306 (Cuba; habits; notes).

[*Quiscalus*] *gundlachi* CORY, List Birds W. I., 1885, 14.

*Chalcophanes gundlachii* GUNDLACH, Journ. für Orn., 1874, 135.

[*Quiscalus baritus*] var. *gundlachi* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 213.

*Holoquiscalus gundlachii* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

### HOLOQUISCALUS JAMAICENSIS (Daudin).

#### JAMAICAN GRACKLE.

Similar in coloration to *H. gundlachii*, but smaller and with the bill shorter and relatively much thicker.

*Adult male*.—Length (skins), 279.4–294.6 (286.3); wing, 147.3–152.4 (149.4); tail, 124.5–129 (126.7); culmen, from base, 33–35.6 (34); depth of bill at base, 12.7–14.2 (13.2); tarsus, 39.4–41.4 (39.6); middle toe, 25.9–28.5 (26.9).<sup>1</sup>

*Adult female*.—Length (skins), 226.1–274.3 (240.5); wing, 127.5–130 (128.8); tail, 103.9–113.8 (109.7); culmen, from base, 28.2–30.7 (29.2); depth of bill at base, 10.9–12.2 (11.4); tarsus, 32–36.1 (34.8); middle toe, 20.1–24.6 (23.4).<sup>1</sup>

Island of Jamaica, Greater Antilles.

(?) [*Gracula*] *barita* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 109 ("America"; no references); ed. 12, i, 1766, 165 (cites *Icterus niger* Brisson, Av., ii, p. 103, pl. 10, fig. 1; *Monedula tota nigra* Sloane, Jam. ii, 299, pl. 257, fig. 2).—GMELIN, Syst. Nat., i, 1788, 396.—LATHAM, Index Orn., i, 1790, 191.—WAGLER, Syst. Av., 1827, *Gracula*, sp. 4.

*Quiscalus baritus* VIEILLOT, Nom. Dict. d' Hist. Nat., xxviii, 1819, 487.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 405 (monogr.).

[*Quiscalus*] *baritus* BONAPARTE, Consp. Av., i, 1850, 425 (Antilles).—GRAY, Hand-list, ii, 1870, 38, no.

[*Quiscalus baritus*] var. *baritus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 213.

*Sturnus jamaicensis* DAUDIN, Traité d' Orn., ii, 1800, 317 (based on *Merops niger*, *iride subargentea*, Brown, Nat. Hist. Jamaica, 476).

*Holoquiscalus jamaicensis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

*Quiscalus crassirostris* SWAINSON, Anim. in Menag., 1838, 355 (Jamaica; coll. W. Hooker).—GOSSE, Birds Jamaica, 1847, 217; Illustr. Birds Jam., 1849, pl. 53.—SCLATER, Cat. Am. Birds, 1862, 359; Ibis, 1884, 159 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 398 (Metcalfé Parish and Spanishtown, Jamaica).—ALBRECHT, Journ. für Orn., 1862, 197.—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 298.—CORY, Auk, iii, 1886, 225 (synonymy and descr.); Birds W. I., 1889, 111 (do.); Cat. W. I. Birds, 1892, 15, 111, 130.—SCOTT, Auk, x, 1893, 179 (notes, etc.).—FIELD, Auk, xi, 1894, 126.

[*Quiscalus*] *crassirostris* BONAPARTE, Consp. Av., i, 1850, 425 (Jamaica).—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.—CORY, List Birds W. I., 1885, 14.

<sup>1</sup> Four specimens.

*Quiscalus* [crassirostris] NEWTON, A. and E., Habb. Jamaica, 1887, 108.  
*Scaphularius* [crassirostris] BONAPARTE, C. resp. Av., i, 1850, 426 (Jamaica?).  
*Quiscalus vulgaris* TEMMINCK, Tabl. Méth., 1838, 10."

# HOLOQUISCALUS NIGER (Boddaert).

## HAITIAN GRACKLE.

Similar to *H. gundluchii*, but smaller and with the violet gloss to plumage much less pronounced, the gloss on greater wing-coverts 1 secondaries dull violet-bluish instead of green.

*Adult male*.—Length (skins), 248.9-281.9 (268.2); wing, 122.4-137.9 (32.1); tail, 106.7-125 (116.8); culmen, from base, 34-35.1 (34.5); depth of bill at base, 10.7-11.7 (10.9); tarsus, 35.1-37.6 (36.1); middle toe, 23.4-27.2 (25.9).<sup>1</sup>

*Adult female*.—Length (skin), 241.3; wing, 118.6; tail, 102.9; culmen, from base, 27.4; tarsus, 32.5; middle toe, 24.1.<sup>2</sup>

Island of Haiti, Greater Antilles.

*Oriolus niger* BODDAERT, Tald. Pl. Enl., 1783, 31 (based on *Trogonale noir*, de St. Domingue, Daubenton, Pl. Enl., pl. 534).—LATHAM, Index Orn., i, 1790, 185.

*Icterus niger* TEMMINCK, Cat. Syst., 1807, 48.

*Agelaius* [niger] VIEILLLOT, Enc. Méth., ii, 1823, 718.

*Quiscalus niger* CASSIN, Proc. Ac. Nat. Sci. Phila., 1893, 407 (monogr.: Jérémie, Haiti).—SCULATER, Ibis, 1884, 159 (monogr.: Cat. Birds Brit. Mus., xi, 1886, 398—CORY, Birds Haiti and San Dom., 1885, 73, pl. 22, fig. 1; Auk, iii, 1886, 226, Birds W. I., 1889, 113, Cat. W. I. Birds, 1892, 15, 111, 131.—CHERRIE, Contr. Orn. St. Domingo, 1896, 17.

[*Quiscalus*] *niger* GRAY, Hand-list, ii, 1870, 38, no. 6529.—CORY, List Birds W. I., 1885, 14.

[*Quiscalus bairdii*] var. *niger* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 213.

*Holoquiscalus niger* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

*Quiscalus ater* "Baird" BRYANT, Proc. Bost. Soc. N. H., xl, 1868, 94 (Santo Domingo).—CORY, Bull. Nutt. Orn. Club, vi, 1881, 153 (Haiti).—TRISTRAM, Ibis, 1884, 168 (Santo Domingo).

# HOLOQUISCALUS BRACHYPTERUS (Cassin).

## PORTO RICAN GRACKLE.

Similar in coloration to *H. niger*, but averaging slightly larger and with the bill shorter and more strongly decurved terminally and much more compressed; iris bright yellow.<sup>3</sup>

*Adult male*.—Length (skins), 261.6-299.7 (272.8); wing, 130-134 (132.3); tail, 114.6-120.4 (117.6); culmen, from base, 33-33.5 (33.2); depth of bill at base, 10.2-11.7 (10.9); tarsus, 35.8-37.8 (36.8); middle toe, 25.7-27.7 (26.4).<sup>1</sup>

*Adult female*.—Length (skins), 233.5-259.1 (242.8); wing, 108.7-117 (112.5); tail, 92.7-102.1 (97); culmen, from base, 28.5-31.8 (30.2).

<sup>1</sup>One specimen.

<sup>3</sup>C. W. Richmond, manuscript.

depth of bill at base, 9.9–10.4 (10.2); tarsus, 33–33.8 (33.3); middle toe, 23.9–24.9 (24.4).<sup>1</sup>

Island of Porto Rico, Greater Antilles.

*Quiscalus baritus* (not *Gracula barita* Linnæus) TAYLOR, Ibis, 1864, 168, part (Porto Rico).

*Quiscalus crassirostris* (not of Swainson) BRYANT, Proc. Bost. Soc. N. H., x, 1866, 188, 254 (Porto Rico).—GUNDLACH, Journ. für Orn., 1866, 188 (Porto Rico).—SUNDEVALL, Öfv. K. Vet.-Ak. Förh. Stockh., 1869, 598 (Porto Rico).

*Quiscalus brachypterus* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 406 (Porto Rico; coll. U. S. Nat. Mus.)—SCLATER, Ibis, 1884, 160 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 399.—CORY, Auk, iii, 1886, 224 (synonymy and descr.); Birds W. I., 1889, 111 (do.); Cat. W. I. Birds, 1892, 15, 111, 132.

[*Quiscalus*] *brachypterus* GRAY, Hand-list, ii, 1870, 38, no. 6528.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.—CORY, List Birds W. I., 1885, 14.

[*Quiscalus baritus*] var. *brachypterus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 213.

*Chalcophanes brachypterus* GUNDLACH, Journ. für Orn., 1874, 312; 1878, 177; Anal. Soc. Esp. Hist. Nat., vii, 1878, 213.

*Holoquiscalus brachypterus* RIDGWAY, Proc. Wash. Ac. Soc., iii, Apr. 15, 1901, 151.

*Chalcophanes lugubris* (not *Quiscalus lugubris* Swainson) SUNDEVALL, Öfv. K. Vet.-Ak. Förh. Stockh., 1869, 598 (Porto Rico).

### HOLOQUISCALUS CAYMANENSIS (Cory).

#### GRAND CAYMAN GRACKLE.

Similar to *Q. gundlachii* but smaller, and the gloss violet-blue or blue, instead of violet, on head, neck, body, and smaller wing-coverts, bluish green, instead of blue, on tail-coverts, and more bronzy green on greater wing-coverts and secondaries.

*Adult male*.—Length (skin), 10.50; wing, 5.24; tail, 4.37; culmen, from base, 1.32; depth of bill at base, 0.46; tarsus, 1.41; middle toe, 0.95.<sup>2</sup>

Island of Grand Cayman, Greater Antilles.

*Quiscalus caymanensis* CORY, Auk, iii, Oct., 1886, 499, 502 (Grand Cayman I., Greater Antilles; coll. C. B. Cory); v, 1888, 158; Birds W. I., 1889, 291; Cat. W. I. Birds, 1892, 15, 111, 129, 147.—RIDGWAY, Proc. U. S. Nat. Mus., x, 1887, 574 (Grand Cayman).

*Holoquiscalus caymanensis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

### HOLOQUISCALUS FORTIROSTRIS (Lawrence).

#### BARBADOS GRACKLE.

Smallest species of the genus (wing not more than 109.2).

*Adult male*.—Head, neck, and body uniform violaceous-black, but slightly glossy; wings and tail greenish black, the bluish green gloss most perceptible on wings; bill, legs, and feet black; length (skins), 222.3; wing, 104.4–109.2 (107.4); tail, 91.7–92.5 (92.2); culmen, from

<sup>1</sup> Five specimens.

<sup>2</sup> One specimen.



27.2-27.7 (27.4); depth of bill at base, 10.9-11.7 (11.4); tarsus, 32.8 (32); middle toe, 21.6-22.6 (22.1).<sup>1</sup>

*Adult female.* Similar to the male, but smaller and duller in color, faintly glossed, and with a brownish cast on head, neck, and back; length (skins), 205.7; wing, 91.4-93.7 (92.5); tail, 75.7-78.7 (77); culmen, from base, 25.1-25.4 (25.4); depth of bill at base, 9.9 (10.7); tarsus, 28.7-30 (29.2); middle toe, 18.3-20.3 (19.6).<sup>1</sup>

Island of Barbados, Lesser Antilles.

*Quiscalus fortirostris* LAWRENCE, Proc. Ac. Nat. Sci. Phila., 1868, 360, 428 (Barbados, Lesser Antilles, coll. G. N. Lawrence). SCLATER, Ibis, 1873, 334 (Barbadoes); 1884, 161 (monogr.), Proc. Zool. Soc. Lond., 1874, 175 (Barbadoes); Cat. Birds Brit. Mus., xi, 1886, 400.—CORY, Auk, iii, 1886, 223 (synonymy and descr.); Birds W. I., 1889, 110 (do.); Cat. W. I. Birds, 1892, 15, 111, 134, 146.

[*Quiscalus*] *fortirostris* GIBBS, Hand-list, ii, 1870, 38, no. 6532.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.—CORY, List Birds W. I., 1885, 14

*Holopuscalus fortirostris* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

#### HOLOQUISCALUS INFLEXIROSTRIS (Swainson).

##### SANTA LUCIA GRACKLE.

*Adult male.* Quite similar in coloration to *H. qundlachii*, but size much less; length (skins), 241.3; wing, 121.9-127.8 (126); tail, 103.6-109.7 (106.7); culmen, from base, 30.5-31.8 (31); depth of bill at base (one specimen), 9.9; tarsus, 33.8-35.6 (34.5); middle toe, 25.4-27.2 (26.2).<sup>2</sup>

*Adult female.* Very different from the male; pileum and hindneck deep hair brown or olive, gradually darkening into sepia brown or olive-sepia on back and scapulars, the rump and upper tail-coverts dark olive-sepia; wings and tail dusky or sooty blackish with indistinct margins and edgings of sooty brown; under parts buffy hair brown, darkening into grayish olive on flanks and under tail-coverts, paler and more buffy on throat and chin; malar region and an indistinct superciliary stripe similar in color to the throat or but slightly darker; length (skins), 228.6-241.3; wing, 107.2-110.5 (108.7); tail, 62.2-66.8 (64.5); culmen, from base, 27.7-28.5 (28.2); depth of bill at base 8.9-9.7 (9.1); tarsus, 31.8-33 (32.3); middle toe, 24.1.<sup>3</sup>

Island of Santa Lucia, Lesser Antilles; island of St. Vincent?<sup>3</sup>

*Quiscalus inflexirostris* SWAINSON, Anim. in Menag., 1838, 300, fig. 52 (locality unknown).—CARSON, Proc. Ac. Nat. Sci. Phila., 1866, 407 (monogr.).—SEMPER, Proc. Zool. Soc. Lond., 1872, 651 (Santa Lucia, Lesser Antilles).—SCLATER, Proc. Zool. Soc. Lond., 1874, 175, part (Santa Lucia); 1889, 305 (Santa Lucia).—IBIS, 1884, 160, part (Santa Lucia; monogr.), Cat. Birds Brit. Mus., xi, 1886, 400.

<sup>1</sup>Three specimens.

<sup>2</sup>Two specimens.

<sup>3</sup>I have not been able to examine specimens from St. Vincent, and therefore doubtful as to the relationship of the birds of that island.



401, part (Santa Lucia).—CORY, Auk, iii, 1886, 224, part (Santa Lucia); Birds W. I., 1889, 111, part (do.); Cat. W. I. Birds, 1892, 15, 111, 146, part (Santa Lucia; St. Vincent?).—RIDGWAY, Proc. U. S. Nat. Mus., xii, 1890, 130 (Santa Lucia).

*Q[uiscalus] inflexirostris* BONAPARTE, Consp. Av., i, 1850, 424.

[*Quiscalus*] *inflexirostris* GRAY, Hand-list, ii, 1870, 38, no. 6525.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38, part (Santa Lucia).—CORY, List Birds W. I., 1885, 14, part.

*Holoquiscalus inflexirostris* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

*Quiscalus luminosus* (not of Lawrence) ALLEN, Bull. Nutt. Orn. Club, v, 1880, 166 (Santa Lucia).

*Quiscalus lugubris* (not of Swainson) SCLATER, Proc. Zool. Soc. Lond., 1871, 271 (Santa Lucia).—SEMPER, Proc. Zool. Soc. Lond., 1872, 650 (Santa Lucia; habits).

(?) *Quiscalus?* LAWRENCE, Proc. U. S. Nat. Mus., i, 1878, 191 (St. Vincent).

### HOLOQUISCALUS MARTINICENSIS Ridgway.

#### MARTINIQUE GRACKLE.

Similar to *H. inflexirostris*, but smaller and with stouter bill; adult female with head and under parts paler, the chin and throat nearly white. (Similar in color to the same sex of *H. guadeloupensis*.)

*Adult male*.—Length (skins), 228.6–259.1 (243.8); wing, 119.4–124 (120.7); tail, 93.2–101.9 (98.3); culmen, from base, 29.2–32 (30.2); depth of bill at base, 10.4–11.2 (10.7); tarsus, 31.2–35.1 (33.5); middle toe, 24.9–25.7 (25.1).<sup>1</sup>

*Adult female*.—Length (skins), 205.7–226.1 (215.9); wing, 102.4–108.5 (105.4); tail, 83.8–85.6 (84.6); culmen, from base, 26.2–27.7 (26.9); depth of bill at base, 8.9–9.4 (9.1); tarsus, 31.2–33.3 (32.3); middle toe, 22.9–23.9 (23.4).<sup>2</sup>

Island of Martinique, Lesser Antilles.

Although hitherto referred to *H. inflexirostris*, this form is far more closely related to *H. guadeloupensis*, from which it scarcely differs except in its slightly shorter wing.

(?) *Quiscalus mexicanus* CASSIN, Proc. Ac. Nat. Sci. Phila., xiii, Dec., 1866, 40 : ("Mexico;" coll. Acad. Nat. Sci. Phila.).<sup>3</sup>

<sup>1</sup> Four specimens.

<sup>2</sup> Two specimens.

<sup>3</sup> I have carefully examined and compared the type of *Quiscalus mexicanus* Cassin, but am unable to identify it positively with any of the known West Indian forms. It comes very close, indeed, to the present bird, and probably is the same; but the uncertainty as to the origin of the specimen (which, however, quite certainly did not come from Mexico) renders the adoption of the inappropriate and misleading name *mexicanus* highly undesirable. The only differences that I am able to detect between the type of *Quiscalus mexicanus* and specimens of *H. martinicensis* consist in the somewhat more purplish gloss of the former and very slightly shorter wing (the other measurements being practically identical), the wing being 3.8 mm. shorter than in the shortest winged *H. martinicensis* examined. The slight color difference may easily have been caused by long exposure to the light, the type of *Q. mexicanus* having been for many years mounted.

*Quiscalus inflexirostris* (not of Swainson) LAWRENCE, Proc. U. S. Nat. Mus., i, 1879, 355, 487 (Martinique; habits; crit.).—SCLATER, Proc. Zool. Soc. Lond., 1874, 175, part (Martinique); Ibis, 1884, 160, part (Martinique); Cat. Birds Brit. Mus., xi, 1886, 401, part (Martinique).—CORY, Auk, iii, 1886, 224, part (Martinique); iv, 1887, 96 (Martinique); Birds W. I., 1889, 111, part (do.); Cat. W. I. Birds, 1892, 15, 111, 146, part (Martinique).

[*Quiscalus*] *inflexirostris* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38, part (Martinique).—CORY, List Birds W. I., 1885, 14, part.

*Holoquiscalus martinicensis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151 (Martinique; coll. U. S. Nat. Mus.).

### HOLOQUISCALUS GUADELOUPENSIS (Lawrence).

#### GUADELOUPE GRACKLE.

Similar to *H. martinicensis*, but wing averaging slightly longer.

*Adult male.* Length (skins), 238.8–261.6 (250.2); wing, 119.9–124.5 (121.9); tail, 93.7–102.1 (97.5); culmen, from base, 28.5–31.2 (30.2); depth of bill at base, 10.4–10.9 (10.7); tarsus, 34–35.3 (34.8); middle toe, 25.4–26.2 (25.7).<sup>1</sup>

*Adult female.*—Length (skins), 199.7–241.3 (221.7); wing, 104.4–109.2 (106.7); tail, 81.5–88.9 (85.9); culmen, from base, 25.9–27.9 (26.9); depth of bill at base, 9.9–10.7 (10.2); tarsus, 31–33 (31.8); middle toe, 22.6–24.1 (22.9).<sup>2</sup>

Island of Guadeloupe, Lesser Antilles; island of Marie Galante ?<sup>3</sup>

*Quiscalus guadeloupensis* LAWRENCE, Proc. U. S. Nat. Mus., i, Apr. 22, 1879, 457; (Guadeloupe, Lesser Antilles; coll. U. S. Nat. Mus.).—SCLATER, Ibis, 1884, 160 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 401.—CORY, Auk, iii, 1886, 226 (synonymy and descr.); viii, 1891, 49 (Guadeloupe); Birds W. I., 1889, 113 (do.), Cat. W. I. Birds, 1892, 15, 111, 147 (Guadeloupe; Marie Galante?).

[*Quiscalus*] *guadeloupensis* CORV, List Birds W. I., 1885, 14.

*Holopicus lus guadeloupensis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

head and neck dark grayish brown (without distinct paler superciliary stripe), fading on chin and throat into brownish gray or grayish hair brown, and on the back and other upper parts deepening into dark sooty brown; general color of under parts deep hair brown, becoming more dusky on flanks and under tail-coverts; length (skin), 235; wing, 104.1; tail, 88.9; culmen, from base, 30.2; depth of bill at base, 9.9; tarsus, 29.2; middle toe, 22.9.<sup>1</sup>

Island of Grenada, and Grenadines, Lesser Antilles.

*Quiscalus luminosus* LAWRENCE, Ann. N. Y. Acad. Sci., i, July, 1878, 162 (Grenada, Lesser Antilles; coll. U. S. Nat. Mus.); Proc. U. S. Nat. Mus., i, 1879, 270, 278, 487 (Grenada; Grenadines; habits, etc.); ix, 1886, 615 (Grenada; habits; descr. nest and eggs).—OBER, Camps in the Caribbees, 1880, 247.—SCLATER, Ibis, 1884, 161 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 402 (Grenada; Grenadines).—CORY, Auk, iii, 1886, 225 (synonymy and descr.); Birds W. I., 1889, 111 (do.); Cat. W. I. Birds, 1892, 15.

[*Quiscalus*] *luminosus* CORY, List Birds W. I., 1885, 14.

*Holoquiscalus luminosus* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

*Quiscalus inflexirostris* (not of Swainson) CORY, Cat. W. I. Birds, 1892, 111, 146, part (Grenada).

### HOLOQUISCALUS RECTIROSTRIS (Cassin).

#### STRAIGHT-BILLED GRACKLE.

*Adult male*.—Similar to the adult males of the West Indian forms, but with the bill very slender and almost perfectly straight (maxilla slightly decurved only at extreme tip), relatively shorter tail, and purplish black wings; color uniform black, glossed with violet, becoming more purplish on head and neck and changing to greenish on edges of primaries; length (skin), about 114.3; wing, 114.3; tail, 102.9; exposed culmen, 27.4; tarsus, 32.<sup>2</sup>

Habitat unknown.

*Quiscalus rectirostris* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 409 (locality unknown; coll. Acad. Nat. Sci. Phila.).

[*Quiscalus*] *rectirostris* GRAY, Hand-list, ii, 1870, 38, no. 6531.

*Holoquiscalus rectirostris* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 151.

### Genus MEGAQUISCALUS Cassin.

*Megaquiscalus* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 409. (Type, *Quiscalus major* Vieillot.)

Large or medium-sized semiterrestrial Icteridæ, with bill about as long as or slightly longer than head, narrow, more or less strongly decurved at tip; tail nearly or quite equal to, sometimes longer than,

<sup>1</sup> One specimen.

<sup>2</sup> For these measurements I am indebted to Mr. Witmer Stone, Conservator of the Ornithological Section, Academy of Natural Sciences. Mr. Stone has carefully compared the type, in the collection under his charge, with examples of other species of the genus and pronounces it very distinct.

wing, plicate,<sup>1</sup> graduated for nearly one-third to nearly one-half its length; sexes very different in size and coloration, the adult males glossy blue black or violet black, the wings and tail more greenish; adult females conspicuously smaller, brownish above, paler brown, buffy, or whitish below.

Bill equal to or longer than head, slender, more or less (usually strongly) decurved at tip, compressed, its basal depth much less than half the length of exposed culmen, its basal width about one-third as long as exposed culmen, or less; culmen nearly straight for most of its length, more or less (usually strongly) decurved terminally, the middle portion sometimes slightly depressed, rounded, or forming a rather flattened ridge; gonys nearly or quite straight, the tip usually more or less decurved, shorter than maxilla from nostril; commissure nearly straight, but more or less decurved terminally, and rather abruptly but not strongly deflexed for the rictal portion. Nostril longitudinal, obtusely pointed anteriorly, with broad superior operculum, the posterior end touching feathering of frontal antæ. Wing moderate (about three and a half to four times as long as culmen), the tip moderately produced (by much more than length of culmen and usually less than length of tarsus, never more), rather pointed; outermost (ninth) primary intermediate between sixth and fifth, equal to sixth, or equal to fifth; seventh and eighth, eighth, seventh, and sixth, or seventh and sixth primaries longest; three or four outer primaries very faintly sinuated on inner webs (five more strongly sinuated in *M. tenuirostris* and *M. nicaraguensis*). Tail nearly or quite equal to wing, sometimes longer, strongly graduated (distance between tips of lateral and median rectrices between one-third and one-half the length of the latter), the rectrices broadest terminally, with inner webs decidedly longer than the outer (except in *M. tenuirostris*). Tarsus long (more than one-fourth to nearly one-third as long as wing, much longer than culmen), its anterior scutella distinct (less so in *M. tenuirostris*,<sup>2</sup>); middle toe, with claw, shorter than tarsus; outer toe with claw falling decidedly short of base of middle claw, the inner slightly longer, with its claw reaching nearly or quite to base of middle claw; hallux decidedly shorter than lateral toes, but much stouter, its claw shorter than the digit (nearly as long in *M. tenuirostris*).

*Coloration.* Adult males glossy blue-black or violaceous-black, the wings and tail greenish black; adult females conspicuously smaller than adult males, brownish above, paler brownish, tawny, buffy, or whitish beneath.

*Range.*—South Atlantic and Gulf coasts of United States southward through Mexico and Central America to western Peru.

<sup>1</sup> Transverse section of the tail V-shaped, as in *Querculus* and *Holopneustes*.

## KEY TO THE SPECIES AND SUBSPECIES OF MEGAQUISCALUS.

- a. Plumage glossy purplish black or dark steel blue, becoming violet anteriorly, more greenish on wings and tail (sometimes on posterior parts of body also). (Adult males.)
- b. Bill larger and stouter (culmen not less than 36.1, depth of bill at base not less than 12.7); plumage more highly glossed, the gloss violet only on head and neck, or on head, neck, and anterior portions of body. (*Megaquiscalus major*.)
- c. Tail much shorter than wing; violet color of anterior portions confined to head, neck, and chest (wing averaging 182.4, tail 171). (South Atlantic and Gulf coasts of United States.)

***Megaquiscalus major major***, adult male (p. 236)

- cc. Tail not much shorter than wing, sometimes longer; violet color of anterior portions extending at least to upper back and upper breast.

- d. Tail averaging longer than wing; breast and anterior portion of sides violet.

- e. Larger, with proportionally longer and more slender bill (wing averaging 189, tail 217.2, culmen 44.7, depth of bill at base 14.7). (Southern Texas and through eastern Mexico and Central America to northern Colombia.).....***Megaquiscalus major macrourus***, adult male (p. 238)

- ee. Smaller, with proportionally shorter and thicker bill (wing averaging 180, tail 188, culmen 41.7, depth of bill at base 14.7). (Coast of southwestern Mexico, from State of Guerrero to Territory of Tepic.)

***Megaquiscalus major obscurus***, adult male (p. 241)

- dd. Tail averaging shorter than wing; breast and sides mostly steel blue.

- e. Larger, with shorter and stouter bill (wing averaging 165.9, tail 163.6, culmen 38.6, depth of bill at base 12.9). (Coast of western Mexico in state of Sinaloa.) ....***Megaquiscalus major graysoni***, adult male (p. 241)

- ee. Smaller, with longer and more slender bill (wing averaging 164.6, tail 161, culmen 39.6, depth of bill at base 12.9). (Coast of northwestern Mexico, in State of Sonora.)

***Megaquiscalus major nelsoni***, adult male (p. 242)

- bb. Bill smaller and more slender (culmen not more than 34.3, depth of bill at base not more than 10.2); plumage with a duller gloss of violet extending over entire under parts, back, and rump.

- c. Wing more than 165, tail 177.8 or more; bill much more slender terminally, with tip very slightly decurved; inner webs of primaries not conspicuously widened. (Valley of Mexico.)

***Megaquiscalus tenuirostris***, adult male (p. 243)

- α. Wing 127; tail not more than 139.7; bill but slightly tapering terminally, with tip strongly decurved; inner webs of primaries conspicuously widened beyond middle. (Interior of Nicaragua.)

***Megaquiscalus nicaraguensis***, adult male (p. 244)

- aa. Plumage mainly dusky brown above, paler brown, tawny, buffy, or whitish below. (Adult females.)

- b. Larger (wing more than 127, tail more than 114); under parts brown (grayish brown, buffy brown, cinnamon-brown, etc.).

- c. Pileum, hindneck, and upper back grayish brown, not conspicuously different from color of rump; bill distinctly decurved at tip.

- d. Larger, with relatively longer tail (wing averaging more than 143.5, tail averaging more than 137.2); under parts darker, more grayish brown.

- c. Larger, with relatively longer and thinner bill (wing averaging 150, tail 147.8, culmen 37.1, depth of bill at base 12.7); coloration much paler, under parts approximating hair brown, the chin and throat conspicuously paler and more buffy.

*Megaquiscalus major macrourus*, adult female (p. 238)

- ce. Smaller, with relatively shorter and thicker bill (wing averaging 144, tail 138.2, culmen 34.5, depth of bill at base 11.9), coloration much darker, the under parts approximating deep broccoli brown or bistre, the chin and throat not conspicuously paler (broccoli brown or deep wood brown) . . . . . *Megaquiscalus major obscurus*, adult female (p. 241)

- dd. Smaller, with relatively shorter tail (wing averaging less than 143.5, tail averaging less than 133); under parts paler, more ochraceous or buffy brown.

- e. Larger (wing averaging 142.7, tail 129.5, culmen 37.1, tarsus 42).

*Megaquiscalus major major*, adult female (p. 237)

- ee. Smaller (wing averaging less than 135.0, tail less than 127, culmen less than 35.6, tarsus less than 40).

- f. Under parts ochraceous-brown; larger, with shorter and stouter bill (wing averaging 134.9, tail 124.5, culmen 32.8, depth of bill at base 11.7) . . . . . *Megaquiscalus major graysoni*, adult female (p. 241)

- ff. Under parts light wood brown; smaller, with longer and thinner bill (wing averaging 132, tail 122.9, culmen 34.3, depth of bill at base 11.7) . . . . . *Megaquiscalus major nelsoni*, adult female (p. 242)

- cc. Pileum, hindneck, and upper back rusty brown, conspicuously different from color of rump; bill very slightly decurved at tip.

*Megaquiscalus tenuirostris*, adult female (p. 243)

- bb. Smaller (wing 104, tail 101.6), under parts dull whitish.

*Megaquiscalus nicaraguensis*, adult female (p. 244)

I have omitted from the key a supposed Colombian form of *M. major* (*M. major assimilis*'), not having been able to examine a specimen.

MEGAQUISCALUS MAJOR MAJOR (Vieillot).

*Adult female*.—Pileum and hindneck sepia brown or bistre; rest of upper parts dark sooty brown or blackish brown, faintly glossed with greenish; a more or less distinct superciliary stripe of lighter buffy brown or brownish buff; beneath this a more or less distinct postocular streak of dusky brown; auricular region, sides of neck, chest, and sides light brownish (varying from broccoli brown to isabella color); chin, throat, and abdomen similar but paler; flanks, thighs, anal region, and under tail-coverts dusky brown.

*Young*.—Similar to adult female, but browner and without gloss above and more buffy beneath, the abdomen, chin, and throat whitish or pale buffy, the chest cinnamon-buff.

*Adult male*.—Length (skins), 365.8–393.7 (381.5); wing, 175.8–189.2 (182.4); tail, 162.1–186.4 (170.7); culmen, from base, 41.7–46 (43.7); depth of bill at base, 13.2–14.7 (14); tarsus, 49–54.6 (51.1); middle toe, 33–38.4 (35.3).<sup>1</sup>

*Adult female*.—Length (skins), 294.6–307.3 (302.3); wing, 133.4–146.1 (142.7); tail, 124.5–135.9 (129.5); culmen, from base, 34.8–38.4 (37.1); depth of bill at base, 11.4–12.2 (11.9); tarsus, 40.1–43.7 (42.4); middle toe, 27.9–30.5 (28.5).<sup>2</sup>

South Atlantic and Gulf coasts of United States (including whole of Florida); north to coast of Virginia (islands above Cape Charles), west to coast of Texas (where grading into *M. m. macrourus*).

*Gracula barita* (not of Linnaeus) WILSON, Am. Orn., vi, 1812, index.

*Quiscalus baritus* PEABODY, Rep. Orn. Mass., 1839, 285 (Massachusetts ?).—LINSLEY, Am. Journ. Sci., xliv, 1843, 260 (Connecticut ?).

*Gracula quiscula* (not of Linnaeus) ORD, Journ. Ac. Nat. Sci. Phila., i, 1818, 253.

Birds Brit. Mus., xi, 1886, 396, part (Bogota).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 410 (monogr.; Bogota).—WYATT, Ibis, 1871, 330 (Cienaga, Colombia).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1877, 323, 751 (w. Peru); Orn. du Pérou, ii, 1885, 431.—SALVIN, Cat. Strickland Coll., 1882, 270 (Colombia).—(?) ROBINSON, Flying Trip to Tropics, 1895, 161 (Barranquilla, Colombia).—(?) ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 162 (Cienaga, prov. Santa Marta).

[*Quiscalus*] *assimilis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.

*Scaphidurus major assimilis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

*Quiscalus macrurus* (not of Swainson) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 482, part (Colombia; w. Peru).

I have not been able to examine a specimen of this supposed form from the type locality. Messrs. Salvin and Godman refer it to *M. m. macrourus*; but if the measurements given by Dr. Sclater are correct it can not be the same. Dr. Sclater refers specimens from Veragua and the Isthmus of Panama to his *Quiscalus assimilis*, and restricts the range of *Q. macrurus* to Mexico, Guatemala, and Honduras; but the Veraguan and Panama examples which I have seen, also those from Cartagena, Colombia, are certainly *M. m. macrurus*. Therefore, if there is such a subspecies as *M. major assimilis*, it is probably restricted to central Colombia and southward.

<sup>1</sup> Eight specimens.

<sup>2</sup> Nine specimens.



*Quiscalus major* Vieillot, Nouv. Dict. d'Hist. Nat., xxviii, 1819, 487, part (Louisiana; includes *M. m. macrourus*); Enc. Méth., ii, 1823, 900. — Bonaparte, Am. Orn., iv, 1825, 35, pl. 4; Geog. and Comp. List, 1838, 28. — Nuttall, Man. Orn. U. S. and Can., i, 1832, 192. — Audubon, Orn. Biog., ii, 1834, 504; v, 1838, 480, pl. 187, Synopsis, 1839, 146, Birds Am., oct. ed., iv, 1842, 52, pl. 220. — Baird, Rep. Pacific R. R. Surv., ix, 1858, 555; Cat. N. Am. Birds, 1859, no. 420, (?) Rep. U. S. and Mex. Bound. Surv., ii, pt. ii, 1859, 20 (Brownsville, Texas). — Slater, Cat. Am. Birds, 1862, 141, part ("North America"); Ibis, 1884, 155 (monogr.), Cat. Birds Brit. Mus., xi, 1886, 395. — Dresser, Ibis, 1865, 494 (Houston and Galveston, Texas, May, June). — Cassin, Proc. Ac. Nat. Sci. Phila., 1866, 409 (monogr.). — Coues, Proc. Hist. Soc. N. H., xii, 1868, 117 (South Carolina); 1871, 25 (Fort Macon, North Carolina; habits, descr. nest and eggs, etc.); Ibis, 1870, 367 (Fort Macon, North Carolina; biography); Check List, 1873, no. 224; 2d ed., 1882, no. 334; Birds N. W., 1874, 204, part (synonymy). — Allen, Bull. Mus. Comp. Zool., ii, 1871, 295 (e. Florida, measurements, etc.). — Baird, Brewer, and Ridgway, Hist. N. Am. Birds, ii, 1874, 222, pl. 36, figs. 3, 4. — Purdie, Bull. Nutt. Orn. Club, ii, 1877, 13, references, etc., to alleged New England occurrences (cited). — Maynard, Birds E. N. Am., 1881, 151. — Ridgway, Nom. N. Am. Birds, 1881, no. 277. — Nehrling, Bull. Nutt. Orn. Club, vii, 1882, 168 (coast s. e. Texas, breeding); Our Native Birds, etc., ii, 1896, 303. — American Ornithologists' Union, Check List, 1886, no. 513. — Smith (H. M.), Auk, iv, 1887, 346 (breeding on Cobb's and other islands near Cape Charles, Virginia). — Cooke, Bird Migr. Miss. Val., 1888, 177 (coast Louisiana and Texas). — Chapman, Auk, v, 1888, 273 (Gainesville, Florida). — Scott, Auk, vi, 1889, 321 (Tarpon Springs, Punta Rasa, and Key West, Florida). — Mortimer, Auk, vii, 1890, 341 (Orange Co., Florida; food). — Bendire, Life Hist. N. Am. Birds, ii, 1895, 506, pl. 7, figs. 30, 31 (eggs). — Beyer, Proc. Louis. Soc. Nat. Hist. 1897-'99 (1900), 106 (s. Louisiana, resident).

*Q[uisca]lus major* Bonaparte, Consp. Av., i, 1850, 424. — Coues, Key N. Am. Birds, 2d ed., 1884, 412. — Ridgway, Man. N. Am. Birds, 1887, 381.

[*Quiscalus*] *major* Coues, Key N. Am. Birds, 1872, 160.

[*Quiscalus major*] var. *major* Baird, Brewer, and Ridgway, Hist. N. Am. Birds, ii, 1874, 214.

[*Quiscalus major*] s. *major* Coues, Birds N. W., 1874, 204 (synonymy).

*Ch[alcophanes] major* Cabanis, Mus. Hein., i, 1851, 196.

*Scaphidurus major major* Ridgway, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

*Quiscalus corvinus* Swainson, Anim. in Menag., 1838, 300 (North America).

*Quiscalus palustris* (not of Cassin) Ridgway, Proc. U. S. Nat. Mus., iii, 1880, 218, part (Louisiana); Nom. N. Am. Birds, 1881, no. 276, part.

#### MEGAQUISCALUS MAJOR MACROURUS (Swainson).

##### GREAT-TAILED GRACKLE.

Similar to *M. m. major*, but larger, with the tail proportionately longer (in adult male, averaging much longer than wing instead of decidedly shorter); *adult male* with the violet gloss of anterior portions extending farther backward, especially on under parts, where covering the breast and anterior portion of sides; *adult female* decidedly darker both above and below, the under parts of the body grayish brown (deep hair brown) instead of buffy brown (wood brown or isabella color), only the chin and throat being tinged with or inclining to buffy.



*Adult male*.—Length (skins), 393.7–457.2 (422.4); wing, 184.2–198.9 (189.2); tail, 195.6–235 (217.2); culmen, from base, 39.6–48 (44.7); depth of bill at base, 14.2–15.7 (14.7); tarsus, 47–52.8 (51.3); middle toe, 33.5–38.4 (35.8).<sup>1</sup>

*Adult female*.—Length (skins), 284.5–355.6 (322.6); wing, 142.2–158.5 (150.1); tail, 129–165.1 (147.8); culmen, from base, 33.8–39.4 (37.1); depth of bill at base, 11.7–14 (12.7); tarsus, 38.4–44.5 (41.1); middle toe, 25.7–30.7 (29).<sup>1</sup>

Southern Texas, and southward through eastern and southern Mexico (including Yucatan and island of Cozumel) and Central America to northern Colombia (Turbo); westward in southern Mexico to edge of the plateau in States of Michoacan (Patzcuaro), Jalisco (Etzatlán, Jalisco), and Guadalajara.

*Quiscalus major* VIEILLOT, Nouv. Dict. d'Hist. Nat., xxviii, 1819, 487, part (Mexico).

*Quiscalus major* (not of Vieillot) BONAPARTE, Proc. Zool. Soc. Lond., 1837, 110 (Mexico).—McCALL, Proc. Ac. Nat. Sci. Phila., 1851, 218 (Rio Grande, Texas).—MOORE, Proc. Zool. Soc. Lond., 1859, 58 (Omoa, Honduras).—SALVIN, Ibis, 1866, 194 (Half Moon Cay, British Honduras).

*Quiscalus macrourus* SWAINSON, Anim. in Menag., 1838, 299 (Real del Monte, Hidalgo, Mexico).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 331 (Texas); Rep. Pacific R. R. Surv., ix, 1858, 554; ed. 1860 (Birds N. Am.), atlas, pl. 58.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 138 (Turbo and Cartagena, Colombia); 1866, 410 (monogr.).—LAWRENCE, Ann Lyc. N. Y., viii, 1865, 180 (Greytown, Nicaragua); ix, 1868, 104 (Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 303 (Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 553 (hot, temperate, and alpine regions, Vera Cruz).—COUES, Check List, 1873, no. 223.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, pl. 36, figs. 1, 2.—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 570 (Cozumel I., Yucatan).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 152 (Izucar de Matamoros, Puebla, Dec.; Plan del Rio, Vera Cruz).—AMERICAN

<sup>1</sup> Seventeen specimens.

There seems to be little variation in size with latitude, though Nicaraguan specimens are the largest and Yucatan examples the smallest in the series examined. Average measurements are as follows:

Locality.	Wing.	Tail.	Culmen, from base.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Eight adult males from Texas .....	188.5	219.2	43.4	14.5	50	34.8
Seven adult males from Yucatan .....	187.2	206.2	45.7	15	53.3	36.6
Two adult males from Nicaragua .....	197.4	222.8	45.7	15.5	50.5	36.6
One adult male from northern Colombia (Turbo) ..	182.4	209	47.8	16	49	36.1
<b>FEMALES.</b>						
Eight adult females from Texas .....	149.4	151.4	36.1	12.4	40.4	27.7
Six adult females from Yucatan .....	149.9	143	37.8	13	41.7	29.7
Three adult females from Nicaragua .....	151.6	147.6	37.8	13	42.4	30.2
One adult female from northern Colombia (Turbo) ..	146.1	148.3	36.3	12.7	41.1	29.5

ORNITHOLOGISTS' UNION, Check List, 1886, no. 512.—HANCOCK, Bull. Ridgw Orn. Club, no. 2, 1887, 18 (Corpus Christi, Texas; habits; notes).—CHODKE, Bird Migr. Mies. Val., 1888, 177 (San Antonio and lower Rio Grande valley, Texas).—BECKHAM, Proc. U. S. Nat. Mus., x, 1888, 872 (Corpus Christi, etc.; habits).—STONE, Proc. Ac. Nat. Sci. Phila., 1890, 209 (Yucatan), 212 (Orizaba).—ATTWATER, Auk, ix, 1892, 238 (San Antonio, Texas, resident).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (San Carlos and Bluefields, Nicaragua).—SINGLEY, Rep. Geol. Surv. Tex., 1894, 372 (Corpus Christi, etc.).—JOUY, Proc. U. S. Nat. Mus., xvi, 1894, 781 (Soledad, San Luis Potosi).—BENDIRE, Life Hist. N. Am. Birds, ii, 1896, 504, pl. 7, figs. 28, 29.—NEHRLING, Our Native Birds, etc., ii, 1896, 302.

*Q[uiscalus] macrourus* BONAPARTE, Consp. Av., i, 1850, 424 (Real del Monte).—COUES, Key N. Am. Birds, 2d ed., 1884, 412.—RIDGWAY, Man. N. Am. Birds, 1887, 381.

[*Quiscalus*] *macrourus* COUES, Key N. Am. Birds, 1872, 160.

*Quiscalus* (err. typ.) *macrourus* LAWRENCE, Ann. Lyc. N. Y., v, 1852, 115 (Texas).

*Quiscalus macroura* BAIRD, Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 20, pl. 20 (Eagle Pass, Texas); Cat. N. Am. Birds, 1859, no. 419.—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas, June).

[*Quiscalus major*] *b. macrourus* COUES, Birds N. W., 1874, 204 (synonymy).

*Quiscalus major*, var. *macrourus* LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Guadalajara, s. w. Mexico).

*Ch[alcophanes] macrourus* CABANIS, Mus. Hein., i, Sept., 1851, 196 (Mexico).

*Chalcophanes macrourus* CABANIS, Journ. für Orn., 1861, 82 (Costa Rica).

*Scaphidurus major macrourus* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

*Quiscalus macrurus* SCLATER, Proc. Zool. Soc. Lond., 1856, 300 (Cordova, Vera Cruz); 1858, 358 (Comayagua, Honduras); 1864, 175 (City of Mexico); Cat. Am. Birds, 1862, 141 (Orizaba; Choctum, Guatemala); Ibis, 1884, 156 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 396 (Jalapa and Orizaba, Vera Cruz, Oaxaca; Merida and Cozumel I., Yucatan; Belize and Half Moon Cay, British Honduras; Choctum and Dueñas, Guatemala; Honduras).—SCLATER and SALVIN, Ibis, 1859, 20 (Dueñas; habits); Proc. Zool. Soc. Lond., 1870, 837 (San Pedro, Honduras).—TAYLOR, Ibis, 1860, 112 (Comayagua,

*Quiscalus major*, var. *macrurus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 225.

*Quiscalus major macrurus* GOODE, Bull. U. S. Nat. Mus., no. 20, 1883, 339.

*Quiscalus assimilis* (not of Sclater, 1862?) SCLATER, Ibis, 1884, 156, part (Veragua; Panama); Cat. Birds Brit. Mus., xi, 1886, 396, part (Calobre and Calovevora, Veragua; Lion Hill, Panama R. R.).—(?) SALVADORI, Boll. Mus. Zool., etc., Torino, xiv, 1899, no. 339, 5 (Punta de Sabana, Isthmus of Panama).

[*Quiscalus*] *assimilis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38, part (Veragua; Panama).

### MEGAQUISCALUS MAJOR OBSCURUS (Nelson).

#### COLIMA BOAT-TAIL.

Similar to *M. m. macrurus*, but much smaller (except feet), with relatively shorter and much thicker bill; *adult male* identical in coloration with that of *M. m. macrurus*; *adult female* decidedly darker than that of *M. m. macrurus*, the chin and throat broccoli brown or deep wood brown (instead of buffy), passing into deep broccoli brown, or almost bister on chest.

*Adult male*.—Length (skins), 381–388.6 (385.3); wing, 178.3–180.8 (179.8); tail, 184.2–190.5 (188.5); culmen, from base, 41.4–41.9 (41.7); depth of bill at base, 14.5–15 (14.7); tarsus, 47.8–48.3 (48); middle toe, 34.3–35.1 (34.5).<sup>1</sup>

*Adult female*.—Length (skins), 298.5–330.2 (314.5); wing, 139.7–149.1 (144); tail, 124.5–151.9 (138.2); culmen, from base, 33.5–35.6 (34.5); depth of bill at base, 11.4–12.4 (11.9); tarsus, 38.9–41.1 (40.4); middle toe, 27.9–31.2 (29.2).<sup>2</sup>

Coast district of southwestern Mexico, from State of Guerrero (Acapulco) through Colima (Manzanillo; Manzanillo Bay) to Territory of Tepic (Ixtapa, Tepic, Santiago, San Blas, etc.).

*Quiscalus major* (not of Vieillot) CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 409, part (Colima, s.w. Mexico).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Manzanillo Bay and plains of Colima).

*Quiscalus macrurus obscurus* NELSON, Auk, xvii, July, 1900, 267 (Acapulco, Guerrero, s. w. Mexico; coll. U. S. Nat. Mus.).

*Scaphidurus major obscurus* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

### MEGAQUISCALUS MAJOR GRAYSONI (Sclater).

#### GRAYSON'S BOAT-TAILED GRACKLE.

Similar to *M. m. obscurus*, but decidedly smaller and with relatively shorter tail (usually decidedly shorter and never much longer than wing, instead of the reverse); *adult male* similar in coloration to *M. m. obscurus* and *M. m. macrurus*, but less extensively violet anteriorly, the breast, sides, and back being chiefly steel blue; *adult female* much paler than in the before-mentioned forms; scarcely distinguishable as to col-

<sup>1</sup> Three specimens.

<sup>2</sup> Four specimens.

oration from that of *M. m. major*, but decidedly smaller than the last named in all measurements except depth of bill.

*Adult male*.—Length (skins), 332.7–365.8 (342.6); wing, 163.8–168.1 (165.9); tail, 157.5–167.6 (163.6); culmen, from base, 36.1–40.6 (38.6); depth of bill at base, 13–15.2 (13.7); tarsus, 44.5–47.5 (45.7); middle toe, 30.5–33 (32).<sup>1</sup>

*Adult female*.—Length (skins), 270.5–285.8 (275.8); wing, 131.6–139.7 (134.9); tail, 118.1–127.5 (124.5); culmen, from base, 30.5–33.3 (32.8); depth of bill at base, 11.4–12.2 (11.7); tarsus, 36.8–39.4 (38.1); middle toe, 24.9–28.2 (26.2).<sup>2</sup>

Coast plain of Sinaloa, northwestern Mexico (Mazatlan, Culiacan, Escuinapa, etc.).

*Quiscalus major* (not of Vieillot) SCLATER, Cat. Am. Birds, 1862, 141, part (Mexico).

*Quiscalus palustris* (not *Scaphidurus palustris* Swainson ?) CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 411 (monogr.; Mazatlan).

[*Quiscalus major*] var. *palustris* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 214.

*Quiscalus major* var. *palustris* LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 282 (Mazatlan; habits).

(?) *Quiscalus macrourus* (not of Swainson) NELSON, North Am. Fauna, no. 14, 1898, 52 (Tres Marias; straggler).

*Quiscalus graysoni* SCLATER, Ibis, 5th ser., ii, Apr., 1884, 157 (Mazatlan, n. w. Mexico; coll. Salvin and Godman); Cat. Birds Brit. Mus., xi, 1886, 397.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 484.

*Q[uisca]lus graysoni* RIDGWAY, Man. N. Am. Birds, 1887, 381.

*Scaphidurus major graysoni* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

#### MEGAQUISCALUS MAJOR NELSONI Ridgway.

SONOCHAN BOAT-TAILED GRACKLE.



Coast district of Sonora, northwestern Mexico (Alamos, Camoa, Guaymas, etc.).

*Quiscalus major* (not of Vieillot) GAMBEL, Journ. Ac. Nat. Sci. Phila., ser. 2, i, 1847, 47 (Gulf of California, occasionally to "Upper California"); Proc. Ac. Nat. Sci. Phila., 1847, 203 (do.).

*Quiscalus palustris* (not *Scaphidurus palustris* Swainson) RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 218 (Gulf of California); Nom. N. Am. Birds, 1881, no. 276, part—BELDING, Proc. U. S. Nat. Mus., vi, 1883, 343 (Guaymas, Sonora).

*Scaphidurus major nelsoni* RIDGWAY Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 151, 152 (Alamos, Sonora, n. w. Mexico; coll. U. S. Nat. Mus.).

### MEGAQUISCALUS TENUIROSTRIS (Swainson).

#### SLENDER-BILLED GRACKLE.

Much smaller than any of the forms of *M. major* and with bill much more slender.

*Adult male*.—Glossy purplish black, much as in *M. major macrourus*, but the gloss duller and more reddish violet on head, neck, and breast; length (skins), about 330.2–368.3; wing, 169.7–170.2 (169.9); tail, 177.8–189.2 (183.4); exposed culmen, 34.3; depth of bill at base, 10.2; tarsus, 45.7; middle toe, 30.5.<sup>1</sup>

*Adult female*.—Pileum, hindneck, and back brown (between burnt umber and prouts brown), darker on posterior portion of back and scapulars; rump blackish brown; wings, upper tail-coverts, and tail brownish black; lores dusky brown; auricular region similar in color to pileum, and separated from the latter by a rather distinct superciliary stripe of wood brown or cinnamon-buffy; under parts (except flanks, anal region, and under tail-coverts) tawny brown or cinnamon, paler and more buffy on throat and abdomen, still paler on chin; flanks, anal region, and under tail-coverts dusky brown; length (skins), 251.5–309.9 (279.9); wing, 128.3–134.6 (131.8); tail, 132.1–135.1 (133.6); exposed culmen, 28.5–30.5 (29.5); depth of bill at base, 8.9–9.7 (9.1); tarsus, 37.6–38.1 (37.8); middle toe, 25.4–26.7 (26.2).<sup>2</sup>

Central Mexico (marshes near the City of Mexico).

(?) *Scaphidurus palustris* SWAINSON, Philos. Mag., new ser., i, 1827, 436 (near City of Mexico).

(?) *Sc[aphidurus] palustris* BONAPARTE, Consp. Av., i, 1850, 426 (Mexico).

*Quiscalus tenuirostris* SWAINSON, Anim. in Menag., 1838, 299, fig. 51, b. c. (near City of Mexico).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 411 (monogr.).—SCLATER, Ibis, 1884, 157, pl. 5 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 397.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 485.

*Q[uisca]lus tenuirostris* BONAPARTE, Consp. Av., i, 1850, 424 (Mexico).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 214.—RIDGWAY, Man. N. Am. Birds, 1887, 381.

[*Quiscalus*] *tenuirostris* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.

*Scaphidurus tenuirostris* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

<sup>1</sup>Measurements from specimens in Acad. Nat. Sci. Phila., and as given by Sclater in Cat. Birds Brit. Mus., xi, p. 397.

<sup>2</sup>Three specimens; one in U. S. Nat. Mus. collection, two in collection of Acad. Nat. Sci. Phila., the latter measured by Mr. Witmer Stone.

## MEGAQUISCALUS NICARAGUENSIS (Salvin and Godman).

## NICARAGUAN GRACKLE.

*Adult male*.—Entire plumage black, the head, neck, body, smaller wing-coverts, and tail-coverts glossed with violet, the larger wing-coverts, remiges, and rectrices slightly glossed with greenish; the violet gloss most pronounced on rump and under parts, inclining to bronzy on back and chest; bill, legs, and feet black; iris silvery white; <sup>1</sup> length (skins), about 279.4–304.8 (292.1); <sup>2</sup> wing, 1.27; <sup>2</sup> tail, 134.6–139.7 (137.2); <sup>2</sup> culmen, from base, 34.3; <sup>3</sup> depth of bill at base, 9.9; <sup>3</sup> tarsus, 36.6–38.1 (37.3); middle toe, 29.2.<sup>3</sup>

*Adult female*.—“Above brown, the back, wings, and tail darker and tinged with purple; an obsolete superciliary stripe and parotic region much paler; beneath dirty white, the breast slightly darker, the flanks and under tail-coverts brown; bill and feet black; length, 241.3; wing, 104.1; tail, middle rectrices, 101.6; lateral rectrices, 63.5; bill to rictus, 29.2; tarsus, 31.8.” (Salvin and Godman, translation of description.)

Nicaragua (Momotombo and Managua, Lake Managua).

I have not seen the female or young of this species, which, judging from the description of Messrs. Salvin and Godman, seems to be very much paler beneath than that of *M. tenuirostris*. Not having seen the male of the latter, I am unable to state the differences between it and the male of the present bird.

*Quiscalus nicaraguensis* SALVIN and GODMAN, Ibis, 6th ser., iii, Oct., 1891, 612 (Momotombo, Lake Managua, Nicaragua, coll. Salvin and Godman).  
RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496, in text sub. *Q. macrourus* (San Carlos, Nicaragua).

*Scaphiurus nicaraguensis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152.

## Genus SCOLECOPHAGUS Swainson.

*Scolecophagus* SWAINSON, Fauna Bor.-Am., ii, 1831, 286, 494. (Type, *Oriolus ferrugineus* Gmelin, = *Turdus carolinus* Muller.)

*Euphagus* CABIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 413. (Type, *Parocobus cyanocephalus* Wagler.)

Medium-sized or rather small and slender Icteridæ, with bill narrow and shorter than head, wing long and pointed, tail nearly as long as wing, moderately rounded, not plicate; adult males entirely glossy black, females and young grayish brown or slaty.

Bill shorter than head, narrowly conoid, slightly decurved at tip, compressed (especially the terminal half); its basal depth about one-half the exposed culmen or a little less, its basal width still less; culmen decidedly but not strongly decurved at tip, slightly elevated and

<sup>1</sup> As noted on label of specimen in U. S. Nat. Mus. collection.

<sup>2</sup> Two specimens.

<sup>3</sup> One specimen.

arched basally, straight or faintly depressed in middle, rather distinctly ridged (more flattened in *S. cyanocephalus*); gonys nearly or quite straight, slightly shorter than maxilla from nostril; commissure nearly straight for most of its length, more or less decurved terminally, more or less concave subbasally, then gradually deflexed to the rictus. Nostril longitudinal, more or less triangular, or slit-like, overhung by a broad and slightly convex membranous operculum, its posterior end in contact with feathering of frontal antiæ. Wing long (between five and six times as long as culmen), with tip well produced (projecting one and a half times to nearly twice the length of the culmen), pointed; outermost (ninth) primary intermediate between seventh and sixth or sixth and fifth, the eighth, seventh, or sixth longest (these three sometimes equal); inner webs of three outer primaries very faintly sinuated near ends. Tail not plicate, more than three-fourths to more than four-fifths as long as wing, slightly but decidedly rounded, the rectrices rather broad and with rounded tips. Tarsus much longer than culmen, less than one-fourth as long as wing, rather slender, its anterior scutella distinct on inner side, less so on outer; middle toe, with claw, shorter than tarsus; claw of outer toe falling short of base of middle claw, the inner slightly shorter; hallux decidedly shorter than lateral toes, but much stouter, its claw decidedly shorter than the digit.

*Coloration*.—Adult males entirely black, more or less glossy, the iris white or pale yellow; adult females and young grayish brown or dull slaty; one species with both sexes more or less varied with rusty in autumn and winter, especially younger birds.

*Range*.—North America. (Two species.)

#### KEY TO THE SPECIES OF SCOLECOPHAGUS.

- a. Plumage black, more or less glossed with green, etc. (Adult males.)
  - b. Bill slender, its depth at base much less than half the lateral length of mandible; plumage very faintly glossed with green, the head and neck still more faintly glossed with bluish. (Winter plumage more or less obscured by deep rusty or chestnut above, cinnamon-buffy beneath.) (Northern and eastern North America.) ..... *Scolecophagus carolinus*, adult male (p. 246)
  - bb. Bill stouter, its depth at base nearly equal to half the lateral length of mandible; plumage strongly glossed with green, changing to violet on head and neck. (Winter plumage faintly varied with grayish brown above.) (Western and southwestern North America.)
    - Scolecophagus cyanocephalus*, adult male (p. 248)
- aa. Plumage grayish (sometimes more or less varied with rusty and cinnamon-buffy). (Adult females and young.)
  - b. Bill slender, etc.
    - c. Plumage dull slate color (in winter more or less overspread above by deep rusty, beneath by cinnamon-buffy).
      - Scolecophagus carolinus*, adult female (p. 246)
    - cr. Plumage brownish gray (without rusty, etc., in winter).
      - Scolecophagus carolinus*, young (p. 246)
      - Scolecophagus cyanocephalus*, adult female and young (p. 249)



## SCOLECOPHAGUS CAROLINUS (Müller).

## RUSTY BLACKBIRD.

*Adult male in summer.*—Uniform black, faintly glossed with bluish green changing to dull violet-bluish on head and neck; under tail-coverts more or less distinctly margined with whitish; bill, legs, and feet, black; iris pale yellow or yellowish white.

*Adult male in winter.* Similar to the summer plumage, but the black obscured or overlaid by rusty brown (burnt umber) on pileum, hindneck, back, and scapulars, and by cinnamon-buffy on superciliary and malar regions, chin, throat, chest, and sides.<sup>1</sup>

*Adult female in summer.* Uniform dull slate color, darker and faintly glossed with bluish green on upper parts; bill, legs, and feet black; iris pale yellow.

*Adult female in winter.* Similar to the summer plumage, but pileum, hindneck, back, and scapulars more or less washed or overlaid by rusty brown, tertials and greater wing-coverts more or less margined with the same, a more or less conspicuous superciliary stripe of buffy, and feathers of malar region, chin, throat, chest, and sides more or less broadly tipped with pale wood brown or brownish buffy.

*Young.*—Above dark sooty brown, more slate-dusky on remiges and rectrices; tertials and terminal portion of greater and middle wing-coverts margined with rusty; a more or less distinct superciliary stripe of light rusty or brownish; under parts brownish gray, more or less tinged with light buffy brown (wood brown or isabella color) on malar region, chin, throat, chest, etc.

*Adult male.*—Length (skins), 209.6–236.2 (219.2); wing, 114.3–116.8 (115.3); tail, 86.1–92.7 (89.9); exposed culmen, 18.3–19.8 (18.8); depth of bill at base, 8.1–8.4 (8.1); tarsus, 30–31.8 (30.5); middle toe, 21.1–22.4 (21.8).<sup>1</sup>

*Adult female.*—Length (skins), 198.1–210.8 (203.7); wing, 106.9–111.5 (108.7); tail, 79–83.8 (81.5); exposed culmen, 17.3–19.1 (18.3); depth of bill at base, 7.6–8.1 (7.9); tarsus, 29.5–31.2 (30.5); middle toe, 20.6–22.6 (21.3).<sup>2</sup>

Northern and eastern North America; breeding from Nova Scotia, New Brunswick, northern Maine, New Hampshire (White Mountains), Vermont, northern New York (south to Herkimer County), and

<sup>1</sup>The extent of this rusty and buffy coloring varies exceedingly in different individuals, probably according to age. In some (doubtless younger birds) the rusty is nearly uniform on the pileum and hindneck, and forms very broad tips to the scapulars and interscapulars, while the cinnamon-buffy forms a conspicuous broad superciliary stripe and is nearly uniform over the malar region, chin, and throat. Other winter males (probably very old individuals) have scarcely a trace of this rusty and buffy coloring, being quite like summer specimens, except that the plumage is more highly glossed.

<sup>2</sup>Five specimens.



northern Michigan north to Ungava (Fort Chimo), and northwardly to the Arctic coast and Alaskan shores of Bering Sea; south in winter to the Gulf coast (Florida to Texas); west, more or less regularly, to western border of the Great Plains, casually to Lower California (San Pedro Martir Mountains); accidental in Greenland.

*Turdus carolinus* MÜLLER, Syst. Nat. Suppl., 1776, 140 (based on *Mauvis de la Caroline* Daubenton, Pl. Enl., pl. 556, fig. 2, = female in autumn).

*Scolecophagus carolinus* RIDGWAY, Proc. U. S. Nat. Mus., viii, sig. 23, Sept. 2, 1885, 356; Orn. Illinois, i, 1889, 322.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 509.—SMITH, Auk, iii, 1886, 284 (Denver, Colorado, Dec. 17).—TURNER, Contr. Nat. Hist. Alaska, 1886, 168 (St. Michaels, Yukon R., etc.).—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 169 (coast Bering Sea, etc.).—TOWNSEND, Cruise "Corwin" in 1885 (1887), 93 (Kotzebue Sound and lower Kowak R., Alaska); Auk, iv, 1887, 12 (Kowak R.).—THORNE, Auk, iv, 1887, 264 (Fort Lyon, e. Colorado).—COOKE, Bird Migr. Miss. Val., 1888, 172 (breeding from Manitoba northward, wintering from St. Louis, Missouri, southward; dates of migr., etc.); Birds Colorado, 1897, 95 (Denver, 2 specs., Dec. 17, 1883; Loveland, 1 spec., Nov. 1889).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 581 (Manitoba, migrant).—HAGERUP, Auk, viii, 1891, 320 (Greenland).—MACFARLANE, Proc. U. S. Nat. Mus., xiv, 1891, 440 (Fort Anderson, Horton R., etc., breeding).—GOSS, Birds Kansas, 1891, 408 (e. Kansas, Oct. to Mar.).—COOMBS, Auk, ix, 1892, 205 (Bayou Teche, Louisiana, abt. fall and spring).—DWIGHT, Auk, x, 1893, 10 (Prince Edward I., breeding).—ANTHONY, Zoe, iv, 1893, 239 (San Pedro Martir Mts., Lower California, accidental).—WAYNE, Auk, xii, 1895, 365 (Wacissa R., n. w. Florida, winter).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 489, pl. 7, figs. 14-16.—NEHRLING, Our Native Birds, etc., ii, 1896, 298.—KNIGHT, Bull. no. 3, Univ. Maine, 1897, 88 (breeding in n. counties and Magalloway district, Maine).—OSGOOD, N. Am. Fauna, no. 21, 1901, 77 (Tyonek, Cook Inlet, Alaska, Sept.; Ft. Kenai, Alaska, May, July).

*S[colecophagus] carolinus* RIDGWAY, Man. N. Am. Birds, 1887, 379.

*Turdus brunneus* BODDAERT, Tabl. Pl. Enl., 1783, 32, part (based on *Mauvis de la Caroline* Daubenton, Pl. Enl., pl. 556, fig. 2).

[*Oriolus*] *ferrugineus* GMELIN, Syst. Nat., i, 1788, 393 (based on *Rusty Oriole* Pennant, Arctic Zool., ii, 260).—LATHAM, Index Orn., i, 1790, 176.

*Gracula ferruginea* WILSON, Am. Orn., iii, 1811, 41, pl. 21, fig. 3.

*Quiscalus ferrugineus* BONAPARTE, Ann. Lyc. N. Y., ii, 1828, 55.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 129.—AUDUBON, Orn. Biog., ii, 1834, 325; v, 1839, 483, pl. 147; Synopsis, 1839, 146, part; Birds Am., oct. ed., iv, 1842, 65, pl. 222.

*Q[uisca]lus ferrugineus* MAXIMILIAN, Journ. für Orn., vi, 1858, 204 (descriptions; food, etc.).

*Scolecophagus ferrugineus* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 286.—BONAPARTE, Geog. and Comp. List, 1838, 28.—WOODHOUSE, Rep. Sitgreaves' Expl. Zuñi and Col. R., 1853, 78, part (Indian Territory).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 551; Cat. N. Am. Birds, 1859, no. 417.—COUES, Proc. Ac. Nat. Sci. Phila., 1861, 225 (coast Labrador, breeding); Check List, 1873, no. 221; 2d ed., 1882, no. 331; Birds N. W., 1874, 198; Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 605 (Souris R., etc., North Dakota, Sept.).—BLAKISTON, Ibis, 1862, 7 (Forks of Saskatchewan, breeding); 1863, 82.—SCLATER, Cat. Am. Birds, 1862, 140; Ibis, 1884, 150 (monogr.), Cat. Birds Brit. Mus., xi, 1886, 390.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 412 (monogr.).—DALL and BANNISTER, Trans. Chicago Ac. Sci., i, 1869, 285 (Nulato, Fort Yukon, etc., Alaska, breeding).—ALLEN, Bull. Mus. Comp.

- Zool., ii, 1871, 291 (e. Florida, winter).—HARTING, Proc. Zool. Soc. Lond., 1871, 114 (Arctic Am.).—MAYNARD, Proc. Bost. Soc., xiv, 1872, 375 (Lake Umbagog and McTalloway valley, Maine, and White Mts., New Hampshire, breeding); Birds E. N. Am., 1881, 146. SNOW, Birds Kansas, 1873, 8 (e. Kansas, migr.). BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 203, pl. 35, fig. 4. —BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 442 (n. New England, breeding). —BREWSTER, Bull. Nutt. Orn. Club, in, 1878, 176 (Upton, Maine; descr. young). —BROWN, Bull. Nutt. Orn. Club, iv, 1879, 10 (Coosada, Alabama, winter). KUMLIEN, Bull. U. S. Nat. Mus., no. 15, 1879, 78 (off n. coast Newfoundland, Oct.). —RIDGWAY, Nom. N. Am. Birds, 1881, no. 273. —CHAMBERLAIN, Bull. no. 1, Nat. Hist. Soc. N. B., 1882, 42 (New Brunswick, summer res.). —NEHRING, Bull. Nutt. Orn. Club, vii, 1882, 167 (Harris Co., Texas, Mar.). —NELSON, Cruise "Corwin" in 1881 (1883), 73 (e. shores Bering Sea). —FINSCH, Journ. fur Orn., 1883, 271 (Portage Bay, Alaska, May 10). —MCLENNAN, Cruise "Corwin," 1884, 116 (Kowak R., etc., Alaska, breeding). —TURNER, Proc. U. S. Nat. Mus., viii, 1885, 241 (Fort Chimo, Ungava, breeding). —BANKS, Auk, ii, 1885, 106 (near St. Johns, New Brunswick, breeding; descr. nest and eggs). —BICKNELL, Auk, ii, 1885, 252 (song).
- [*Scolecophagus*] *ferrugineus* COUES, Key N. Am. Birds, 1872, 160.
- [*Scolecophagus*] *ferrugineus* COUES, Key N. Am. Birds, 2d ed., 1884, 411.
- [*Scolecophagus*] *niger* BONAPARTE, Consp. Av., i, 1850, 423.
- [*Scolecophagus*] *niger* CABANIS, Mus. Hein., i, 1851, 195.
- [*Oriolus*] *fuscus* GMELIN, Syst. Nat., i, 1788, 393 (based on *Brown-headed Oriole* Pennant, Arctic Zool., ii, 259).
- [*Turdus*] *hudsonius* GMELIN, Syst. Nat., i, 1788, 818 (based on *Hudsonian Thrush* Pennant, Arctic Zool., ii, 204, = autumnal female?).
- [*Turdus*] *novboracensis* GMELIN, Syst. Nat., i, 1788, 818 (based on *New York Thrush* Pennant, Arctic Zool., ii, 205, = autumnal male?).
- [*Turdus*] *labradorius* GMELIN, Syst. Nat., i, 1788, 832 (based on *Labrador Thrush* Pennant, Arctic Zool., ii, 206, = spring or summer male). —LATHAM, Index Orn., i, 1790, 342.
- [*Oriolus*] *leucocephalus* LATHAM, Index Orn., i, 1790, 175.
- Gracula quiscalia* var. LATHAM, Index Orn., i, 1790, 191.
- "*Xanthocephalus xanthocephalus*" WARREN (O. B.), Auk, xii, 1895, 191 (n. Michigan, see Warren, Auk, xv, 1898, 193).
- Pendulinus ater* VIEILLLOT, Nouv. Diet. d'Hist. Nat., v, 1810, 320.
- Ch[alcophanes]* *viridescens* WAGLER, Syst. Av., 1827, App. Oriolus, sp. 9.

### SCOLECOPHAGUS CYANOCEPHALUS (Wagler).

#### BREWER'S BLACKBIRD.

*Adult male in summer.*—Entirely black, the head and neck strongly glossed with violet, the rest of the plumage with bluish green; bill, legs, and feet black; iris pale yellow or yellowish white.

*Adult male in winter.* Similar to the summer plumage, but more highly glossed. (Some specimens, doubtless younger birds, have the feathers of the back indistinctly margined terminally with grayish brown, those of the chest with pale buffy grayish.)

*Immature male in first winter.*—Similar to the adult male, but

feathers of head, neck, back, scapulars, chest, and sides narrowly tipped with grayish brown (paler and more buffy on under parts).

*Adult female in summer.*—Head, neck, and under parts brownish slate-color or dark brownish gray, faintly glossed with greenish on under parts of body and with violet on head and neck, especially on pileum and hindneck; upper parts darker, especially the wings and tail, which are more strongly glossed with bluish green; bill, legs, and feet black; iris light brown.

*Adult female in winter.*—Similar to the summer plumage, but color of head, neck, and anterior under parts paler and more buffy gray (the superciliary region, malar region, chin, and throat pale hair brown).

*Young.*—Very similar in coloration to winter females, but texture of plumage very different and feathers without gloss.

*Adult male.*—Length (skins), 213.4–247.7 (228.6); wing, 120.1–133.9 (128.5); tail, 91.9–107.2 (98.8); exposed culmen, 21.1–23.6 (22.6); depth of bill at base, 9.1–10.2 (9.7); tarsus, 30.5–33 (32.3); middle toe, 20.3–22.4 (21.3).<sup>1</sup>

*Adult female.*—Length (skins), 198.1–221 (210.3); wing, 115.8–119.6 (117.6); tail, 87.1–92.7 (88.9); exposed culmen, 19.1–20.8 (20.1); depth of bill at base, 8.4–9.7 (8.9); tarsus, 28.7–32 (30.5); middle toe, 19.8–21.1 (20.3).<sup>2</sup>

Western United States and British provinces and greater part of Mexico; north to British Columbia, Alberta, Saskatchewan, and Manitoba (breeding); east to Minnesota, Nebraska, Kansas, Indian Territory, and Texas, occasionally, during migrations, to Iowa, Wisconsin, Illinois, Missouri, Louisiana, and even South Carolina; breeding south to Lower California (San Pedro Martir range, 8,200 feet; San Fernando), southern Texas (San Antonio; Houston; Brownsville?), and northern Tamaulipas (Matamoras)?;<sup>3</sup> in winter over the whole of

<sup>1</sup> Eight specimens.

<sup>2</sup> Nine specimens. California specimens average decidedly smaller than those from east of the Sierra Nevada, as the following measurements show:

Locality.	Wing.	Tail.	Ex- posed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<b>MALES.</b>						
Three adult males from California (2) and Oregon (1) .....	122.9	94.7	21.8	9.4	31.8	21.8
Five adult males from Rocky Mountain plateau..	131.1	101.1	23.1	9.9	32.5	21.1
<b>FEMALES.</b>						
Five adult females from California .....	117.3	88.4	20.1	8.9	30.2	20.8
Four adult females from Rocky Mountain plateau..	118.9	89.9	19.8	9.1	31	20.8

<sup>3</sup> The breeding record for Matamoras is somewhat doubtful. The species undoubtedly breeds over the more northern portions of Mexico, but I have not data which would enable me to define with greater precision the southern limits of the breeding range.

Mexico (except Yucatan and parts of the *tierra caliente*) to northern Guatemala (Chancol).

*Ps[arocolinus] cyanocephalus* WAGLER, Isis, 1829, 758 (Mexico; no locality given).  
*Sc[olopagus] cyanocephalus* CABANIS, Mus. Hein., i, 1851, 195.

*Scolecophagus cyanocephalus* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 552; Cat. N. Am. Birds, 1859, no. 418, Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 20 (Santa Rosalia, Mexico). HEERMANN, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 53 (California; New Mexico, Texas; habits).—COOPER and SICKLEY, Rep. Pacific R. R. Surv., xii, pt. 2, 1860, 209 (Washington, Oregon, etc.).—BLAKISTON, Ibis, 1862, 7 (Forks of Saskatchewan, breeding). SCLATER, Cat. Am. Birds, 1862, 140 (California); Ibis, 1884, 151 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 390 (Ciudad Durango; near City of Mexico; Oaxaca; "Central America?"; etc.).—DRESSER, Ibis, 1865, 493 (San Antonio, Texas, breeding, Matamoros, Tamaulipas, July, abundant).—COES, Proc. Ac. Nat. Sci. Phila., 1866, 90 (Fort Whipple, Arizona, resident); Check List, 1873, no. 222, 2d ed., 1882, no. 332, Birds N. W., 1874, 199, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 605 (Pembina, etc., North Dakota, breeding).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 413 (monogr.).—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas, Nov. to Feb.).—SUMICHEAST, Mem. Bost. Soc. N. H., i, 1869, 553 (Orizaba and plateau of Mexico in winter).—COOPER, Orn. Cal., 1870, 278. SNOW, Birds Kansas, 1873, 8 (e. Kansas, common).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Mazatlan).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 206, pl. 35, fig. 3.—HENSLOW, Rep. Orn. Spec. Wheeler's Surv., 1874, 82 (Garland, Colorado; descr. nest and eggs, etc.), 122 (New Mexico and Arizona; habits); Zool. Exp. W. 100th Merid., 1875, 321 (localities in Utah, Colorado, New Mexico, and Arizona; habits).—RIDGWAY, Orn. 40th Parallel, 1877, 510 (Nevada and Utah; habits, etc.); Nom. N. Am. Birds, 1881, no. 274; Orn. Illinois, i, 1889, 323.—SANNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 27 (Brownsville, Texas, breeding); v, 1879, 399 (Lometa, s. e. Texas; not breeding?).—MERRILL, Proc. U. S. Nat. Mus., i, 1879, 135 (Fort Brown, Texas, Oct. to Apr.).—MEARNS, Bull. Nutt. Orn. Club, iv, 1879, 160 (Fort Klamath, e. Oregon, resident; habits); Auk, vii, 1890, 258 (Mogollon and San Francisco Mts., etc., Arizona, breeding in pine belt, habits, etc.).—NEHLING, Bull. Nutt. Orn. Club, vii, 1882, 167 (Houston, etc., s. e. Texas, breeding); Our Native Birds, etc., ii, 1896, 299, pl. 17, fig. 5.—BELDING, Proc. U. S. Nat. Mus., v, 1883, 546 (San José del Cabo, Lower California, breeding), 547 (Miraflores, Lower California); vi, 1883, 343 (Guaymas, Sonora).—AGERSBORG, Auk, ii, 1885, 282 (s. e. South Dakota, breeding).—SETON, Auk, iii, 1886, 322 (w. Manitoba, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 510.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 152 (San Baltazar, Puebla, Nov.; Nativitas, Tlaxcala, Dec.).—BECKHAM, Proc. U. S. Nat. Mus., x, 1887, 671 (Texas localities; habits).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 460.—LOOMIS, Auk, iv, 1887, 76 (Chester, South Carolina, 3 specimens, Dec. 9); viii, 1891, 167 (do.).—COOPER, Bird Migr. Misc. Val., 1888, 173 (breeding in w. Manitoba, Vermilion, Dakota, and Caddo, Indian Territory; other localities and dates).—KOHN, Auk, vi, 1889, 190 (New Orleans, Louisiana, small flock, Dec. 23, 1888).—GROSS, Birds Kansas, 1891, 409 (w. Kansas, resident).—HATCH, Birds Minn., 1892, 286 (breeding along Red R. and e. to Crow Wing Co.).—THOMPSON, Proc. U. S. Nat. Mus., xii, 1891, 581 (Manitoba, breeding at Winnipeg, Oseawa, Carberry, etc.; habits).—FANNIN, Check List Birds Brit. Columbia, 1891, 34 (both sides Cascade Mts.).—NUTTING, Bull. Lab. N. H. Univ. Iowa, ii, no.

3, 1893, 274 (lower Saskatchewan).—ANTHONY, *Zoe*, iv, 1893, 239 (San Pedro Martir Mts., Lower California, breeding); Auk, xii, 1895, 140 (San Fernando, Lower California, breeding).—BENDIRE, *Life Hist. N. Am. Birds*, ii, 1895, 493, pl. 7, figs. 17–20 (eggs).—CHAPMAN, *Bull. Am. Mus. N. H.*, x, 1898, 42 (Las Vigas, Vera Cruz, 8,000 ft.).

*Sc[olecophagus] cyanocephalus* CABANIS, *Mus. Hein.*, i, 1851, 195, footnote (Mexico).

*S[colecophagus] cyanocephalus* COUES, *Key N. Am. Birds*, 2d ed., 1884, 411.—RIDGWAY, *Man. N. Am. Birds*, 1887, 379.

[*Scolecophagus*] *cyanocephalus* COUES, *Key N. Am. Birds*, 1872, 160.—SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 38.

*Scolecophagus cyanocephalus* BEYER, *Proc. Louis. Soc. Nat.* for 1897–99 (1900), 105 (Louisiana in winter).

*Scolecophagus mexicanus* SWAINSON, *Anim. in Menag.*, 1838, 302 (Mexico).—BAIRD, in Stansbury's *Rep. Gt. Salt Lake*, 1852, 331 (Fort Union; California).—NEWBERRY, *Rep. Pacific R. R. Surv.*, vi, 1857, 86 (California; Oregon; Fort Vancouver, Washington).

*Sc[olecophagus] mexicanus* BONAPARTE, *Consp. Av.*, i, 1850, 423 (w. Mexico; N. Am.)

*Quiscalus mexicanus* HEERMANN, *Journ. Ac. Nat. Sci., Phila.*, ser. 2, ii, 1852, 268 (California).

*Quiscalus breweri* AUDUBON, *Birds Am.*, oct. ed., vii, 1843, 345, pl. 492 ("upper Missouri River and Yellowstone").

*Scolecophagus ferrugineus* (not *Oriolus ferrugineus* Gmelin) AUDUBON, *Synopsis*, 1839, 146, part (Columbia R.).—GAMBEL, *Journ. Ac. Nat. Sci. Phila.*, ser. 2, i, 1847, 47.—WOODHOUSE, *Rep. Sitgreaves' Expl. Zúñi and Col. R.*, 1853, 78, part (Texas; New Mexico; California).—HOLDEN, *Proc. Bost. Soc. N. H.*, xv, 1872, 203 (Sherman, Wyoming, breeding).

*Scolecophagus ferrugineus* GAMBEL, *Proc. Ac. Nat. Sci. Phila.*, 1847, 203 (New Mexico; California).

*Quiscalus purpureus* (not of Woodhouse) NEWBERRY, *Rep. Pacific R. R. Surv.*, x, pt. vi, 1859, 86 (San Francisco, California).

*Scolecophagus carolinus* (not *Turdus carolinus* Müller) SETON, *Auk*, iii, 1886, 322 (Big Plain and Winnipeg, Manitoba, breeding).

#### Genus PTILOXENA Chapman.

*Ptiloxena* CHAPMAN, *Bull. Am. Mus. Nat. Hist.*, iv, no. 1, Dec., 1892, 307. (Type, *Quiscalus atrovioleaceus* D'Orbigny.)

Medium-sized semi-terrestrial Icteridæ with bill shorter than head, decidedly curved above, about half as deep at the base as length of culmen; nostrils small, narrow, obliquely vertical, above lateral median line of maxilla; wing moderate with tip subtruncate; tail about four-fifths as long as wing, not plicate, rounded, with rectrices broad and rounded at ends; middle toe, with claw, slightly shorter than tarsus, and claws of lateral toes falling short of base of middle claw; structure of feathers of anterior contour feathers (especially on chest) peculiar, the barbicels on terminal two-thirds fasciculate and adherent to the barb; coloration uniform black, slightly glossed (sexes alike).

Bill shorter than head, conical, but with upper outline decidedly



convex, its depth at base a little less than half the length of culmen, its basal width decidedly less than half the length of exposed culmen; culmen gently convex (the terminal portion more decidedly so), the middle portion nearly straight, distinctly ridged, but the ridge broad and rounded; gonys straight, decidedly shorter than maxilla from nostril; commissure nearly straight or slightly convex in middle, straight or faintly concave terminally and subbasally, the basal portion strongly but not abruptly deflexed to the rictus. Nostril small, narrow, oblique (anterior end highest), decidedly above lateral median line of maxilla, posteriorly in contact with dense feathering of the frontal antæ, the latter filling the greater part of the nasal fossæ, leaving but a small and narrow membrane exposed above and mostly behind the nostril. Wing moderate (nearly five times as long as culmen, nearly four times as long as tarsus), the tip moderately produced (a little longer than tarsus), slightly rounded or subtruncate; outermost (ninth) primary equal to fifth or a little shorter; seventh or seventh and sixth primaries longest, the eighth but little shorter; inner webs of three or four outer primaries slightly sinuated beyond middle. Tail not plicate, about four-fifths as long as wing (about four times as long as culmen), rounded, the rectrices slightly wider terminally and with rounded tips. Tarsus much longer than culmen (a little less than one-third as long as tail), its anterior scutella distinct; middle toe, with claw, slightly shorter than tarsus; claws of lateral toes falling short of base of middle claw; hallux about as long as lateral toes, much stouter, its claw decidedly shorter than the digit. Plumage of the throat and chest peculiar; "the barbicels, while apparently of normal number, are fasciculate, and, except at its basal third, adhere to the barb; for the terminal half of the feather, therefore, the barbs have no connection with one another, and this gives to the parts in which these feathers grow a finely streaked, hairy appearance."<sup>1</sup>

*Coloration.* Entirely black, glossed with violet (bluish green on wings and tail); sexes alike in color.

*Range.*—Peculiar to the island of Cuba, Greater Antilles. (Monotypic.)

**PTILOXENA ATROVIOLOACEA (D'Orbigny).**

**D'ORBIGNY'S BLACKBIRD.**

*Adults (sexes alike).* Uniform glossy black, the head, neck, and chest with a slight bluish reflection, passing into a more violet hue on back, scapulars, lesser and middle wing-coverts, rump, and under parts of body, the gloss on margins of greater wing-coverts, remiges, and rectrices bluish or bluish green; bill, legs, and feet, black; iris brown.\*

<sup>1</sup> Chapman, Bull. Am. Mus. Nat. Hist., iv, 1892, pp. 307, 308.

\*J. H. Riley, manuscript.

*Adult male*.—Length (skins), 236.2–254 (239.3); wing, 131.3–141 (136.1); tail, 105.2–112.8 (109); culmen (from base), 24.9–27.7 (25.7); depth of bill at base, 11.7–13.2 (12.7); tarsus, 32.5–35.6 (33.8); middle toe, 23.9–27.7 (25.7).<sup>1</sup>

*Adult female*.—Length (skins), 217.2–243.8 (228.3); wing, 122.4–132.6 (128.5); tail, 97.3–105.9 (101.6); culmen (from base), 22.9–24.4 (23.6); depth of bill at base, 10.9–12.2 (11.7); tarsus, 30–32.3 (31); middle toe, 22.6–23.4 (23.1).<sup>1</sup>

Island of Cuba (including Isle of Pines), Greater Antilles.

*Quiscalus atromolaceus* D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 121.—

CORY, Auk, iii, 1886, 227; Birds W. I., 1889, 114.

[*Quiscalus*] *atroviolaceus* CORY, List Birds W. I., 1885, 14.

*Sc[caphidurus]* *atroviolaceus* GRAY, Gen. Birds, ii, 1849, 341.

*Sc[aphidurus]* *atroviolaceus* BONAPARTE, Consp. Av. i, 1850, 426.

*Sc[olecophagus]* *atroviolaceus* CABANIS, Mus. Hein., i, Sept., 1851, 196.

*Scolecophagus atromolaceus* CABANIS, Journ. für Orn., iv, 1856, 15 (descr. eggs).—

BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307.—CASSIN, Proc. Ac. Nat. Sci.

Phila., 1866, 415 (monogr.).—GUNDLACH, Repert. Fisico-Nat. Cuba, 1866,

259; Journ. für Orn., 1874, 134.

*Dives atromolaceus* SCLATER, Ibis, 1884, 152 (monogr.); Cat. Birds Brit. Mus. xi, 1886, 393 (San Cristobal, Cuba).—CORY, Cat. W. I. Birds, 1892, 15, 111, 129 (Cuba and Isle of Pines).

*Ptiloxena atromolaceus* CHAPMAN, Bull. Am. Mus. N. H., iv, no. 1, Dec., 1892, 307.

(?) *Chalcophanes quiscalus* GUNDLACH, Journ. für Orn., 1856, 16 (Cuba); 1871, 288 (do.).

(?) *Scolecophagus æquatorialis* (not *Quiscalus æquatorialis* Sclater) CASSIN, Proc. Ac. Nat. Sci. Phila., Dec., 1866, 414 (no locality; crit.)

#### Genus DIVES Cassin.

*Dives* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 413. (Type, *Lampropsar dives* Bonaparte.)

Medium-sized Icteridæ of uniform black coloration, with bill shorter than head, wing rather short and rounded, tail nearly as long as wing, rounded, with very broad rectrices, and stout feet.

Bill slightly to decidedly shorter than head, narrowly conical, compressed, rather obtuse, its basal depth a little less than one-half the length of culmen, its basal width decidedly less; culmen nearly straight but slightly convex, broad but not flattened, ridged laterally above nasal fossæ; gonys straight or very faintly convex, slightly shorter than distance from nostril to tip of maxilla; commissure nearly straight to the rictal portion, where strongly deflexed. Nostril small, roundish, posteriorly touching feathers of frontal antiæ, overhung by a convex membranous operculum. Wing moderate or rather short (about four and a half times as long as culmen); wing-tip short (about as long as maxilla from frontal antiæ), rounded; outermost (ninth) primary shorter than second, the fifth longest, but eighth, seventh, sixth, and fourth nearly as long; inner webs of outermost primaries not sinuated.

<sup>1</sup> Five specimens.

Tail not plicate (?), nearly as long as wing, rounded, the rectrices broad. Tarsus much longer than culmen, rather stout, the anterior scutella very distinct; middle toe, with claw, much shorter than tarsus but decidedly longer than culmen; lateral toes about equal, rather short, their claws not reaching to base of middle claw; hallux nearly as long as lateral toes, much stouter, its claw much shorter than the digit.

*Coloration.*—Uniform black, in both sexes.

*Range.*—Southern Mexico to western Peru. (Three species, two of them South American.)

#### DIVES DIVES (Lichtenstein).

##### SUMICHRAST'S BLACKBIRD.

*Adult male.*—Entirely uniform deep black, with a slight greenish blue gloss, especially on head, neck, and anterior under parts; bill, legs, and feet black; length (skins), 264.2–281.9 (271.8); wing, 123.2–132.8 (127.3); tail, 114.3–127 (119.1); culmen, from base, 28.5–32 (30.5); depth of bill at base, 13–14.2 (13.5); tarsus, 38.1–40.4 (39.4); middle toe, 25.4–27.9 (26.2).<sup>1</sup>

*Adult female.*—Similar to the male in plumage but smaller and usually with the black slightly less intense or glossy; length (skins), 235–255.3 (243.1); wing, 112.3–116.8 (113); tail, 102.1–114.3 (109); culmen, from base, 27.4–29.2 (27.9); depth of bill at base, 12.4–13.2 (12.7); tarsus, 36.8–38.6 (37.6); middle toe, 22.9–24.9 (23.9).<sup>2</sup>

A series of ten adults from Yucatan, embracing both sexes, but unfortunately none of them with sex determined, measure as follows: Length (skins), 233.7–287 (255); wing, 111.3–128.3 (120.4); tail, 97.8–121.9 (111.3); culmen, from base, 27.2–30.5 (28.5); depth of bill at base, 13.2–15.5 (14); tarsus, 35.6–39.1 (37.3); middle toe, 23.4–27.4 (25.1).

*Young.*—Uniform dull sooty black or very dark sooty brown, rather lighter on under parts of body; remiges and rectrices as in adults.

Southeastern Mexico, in States of Vera Cruz (Chichicaxtli, Mirador, Orizaba, Coatzacoalcas, Plan del Rio, etc.), Puebla (Metlatoyuca), Mexico (Valley of Mexico), Oaxaca (Tuxtepec, Chiltepec, Playa Vicente, Tehuantepec, Oaxaca, etc.), Chiapas (Guichicovi), and Yucatan, and southward through eastern and central Guatemala to British Honduras (Belize) and Honduras (Guaruma).

*Icterus dives* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 1 (Mexico; see Journ. fur Orn., 1863, 56).

[*Lamprospiza*] *dives* BONAPARTE, Consp. Av., i, 1850, 425.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.

[*Lamprospiza*] *dives* CABANIS, Mus. Hein., i, 1851, 194, footnote (Chiltepec; Cosamaluan, Real del Monte).

*Lamprospiza dives* CABANIS, Journ. für Orn., 1861, 83 (crit. nomencl.).—BOCCARD, Proc. Zool. Soc. Lond., 1883, 446 (Merida, a Yucatan).

<sup>1</sup>Seven specimens.

<sup>2</sup>Six specimens.



- Scolecophagus dives* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, Dec., 1866, 413 (monogr.).
- Dives dives* FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 152 (Plan del Rio, Vera Cruz).—RIDGWAY, Proc. U. S. Nat. Mus., xiv, 1891, 470 (Guaruma, Honduras).—STONE, Proc. Ac. Nat. Sci. Phila., 1890, 209 (int. Yucatan).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1893, 281 (Chichen Itza, Yucatan; notes); x, 1898, 30 (Jalapa, Vera Cruz).
- Quiscalus* — ? SCLATER, Proc. Zool. Soc. Lond., 1856, 300 (near Cordova, Vera Cruz).
- Quiscalus sumichrasti* DE SAUSSURE, Rev. et Mag. de Zool., 1859, 119, pl. 3, figs. 2-4 (Mexico).—SCLATER, Proc. Zool. Soc. Lond., 1859, 365 (Jalapa, Vera Cruz), 381 (Playa Vicente, Oaxaca); 1864, 175 (Valley of Mexico); Cat. Am. Birds, 1862, 140 (Orizaba and Jalapa, Vera Cruz).—SALVIN and SCLATER, Ibis, 1860, 398 (Coban and Tactic, Vera Paz, Guatemala).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (hot and temperate regions, Vera Cruz).
- Quiscalus sumichrasti* SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (hot and temperate zones, Vera Cruz).
- Dives sumichrasti* SCLATER, Ibis, 1884, 152 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 392 (Jalapa and Orizaba, Vera Cruz; Merida, n. Yucatan; Belize, British Honduras; Choctum and Coban, Vera Paz, Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 481 (Chiltepec, Cosamaloapan, etc., Mexico; Achil, etc., Guatemala, etc.).
- Quiscalus mexicanus* (not of Cassin) LAWRENCE, Bull. U. S. Nat. Mus., No. 4, 1876, 24 (Guichicovi, Tehuantepec, Oaxaca).

## Genus ICTERUS Brisson.

- Icterus* BRISSON, Orn., ii, 1760, 85. (Type, by elimination, *Oriolus icterus* Linnæus.)
- Xanthornus* SCOLLI, Intr. ad. Hist. Nat., 1777, 481. (Type, *Oriolus icterus* Linnæus.)
- Pendulinus* VIEILLLOT, Analyse, 1816, 33. (Type, *Oriolus spurius* Linnæus.)
- Yphantes* VIEILLLOT, Analyse, 1816, 33. (Type, *Oriolus baltimore* Linnæus, = *Coracias galbula* Linnæus.)
- Yphanthes* VIEILLLOT, Enc. Méth., ii, 1823, 708.
- Hyphantes* (emendation) CABANIS, Mus. Hein., i, 1851, 183.
- Bananivorus* BONAPARTE, Compt. Rend., xxxvii, 1853, 834. (Type, *Oriolus bonana* Linnæus.)
- Euopsar* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 47. (Type, *Psarocolius croconotus* Wagler.)
- Andriopsar* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 49. (Type, *Psarocolius gularis* Wagler.)
- Ateleopsar* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 53. (Type, *Psarocolius melanocephalus* Wagler.)
- Cassiculoides* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 54. (Type, *Icterus parisorum* Bonaparte.)
- Poliopsar* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 55. (Type, *Icterus wagleri* Sclater.)
- Melanopsar* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 56. (Type, *Oriolus chrysocephalus* Linnæus.)
- Icterioides* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 60. (Type, *Icterus auricapillus* Cassin.)
- Aporophantes* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 63. (Type, *Agelaius pyrrhopterus* Vieillot.)

Small or medium-sized arboreal Icteridae with bill elongate conical, acute, not longer than head; nasal fossae well defined, broad and rounded anteriorly, the nostrils overhung by a conspicuous semicorneous operculum; tail more than three fourths as long as wing (often as long as, sometimes longer than wing), more or less rounded (sometimes graduated); tarsi rather short (never very much longer than culmen, sometimes shorter), and middle toe, with claw, never longer than tarsus (usually shorter); colors usually black and orange or black and yellow, in large strongly contrasted areas; if without orange or yellow, chestnut or orange-brown replacing those colors.

Bill much shorter than head to about as long, elongate-conical, acute, with straight outlines or with the tip slightly decurved, its depth at base usually less than half the length of commissure, sometimes (in *I. xanthorrhoeus*) nearly if not quite equal to length of gonys; culmen straight or rather strongly (but gradually) decurved terminally, the mesorhinium usually narrow and distinctly (sometimes almost sharply) ridged, more rarely broader and rounded, or even somewhat flattened; gonys straight or slightly decurved terminally; commissure straight to behind nostril, or slightly arched, the rectal portion strongly and more or less abruptly deflexed. Nostril longitudinal, narrow (linear or more or less crescentic), overhung by a very distinct semicorneous operculum, the anterior end of the nasal fossae broad and rounded. Wing moderate, its tip moderately produced, rounded or subtruncate; outermost (ninth) primary always shorter than sixth, sometimes shorter than third, the eighth to seventh, eighth to fifth, or seventh to fifth longest; inner webs of longer primaries very faintly or not appreciably sinuated. Tail decidedly shorter than wing to longer than wing, slightly rounded to strongly graduated (the graduation sometimes equal to more than one-fourth the length of middle rectrices). Tarsus usually a little longer than culmen, sometimes slightly shorter, the acrotarsal scutella distinct; middle toe, with claw, shorter than tarsus (never conspicuously so), rarely (in *I. icterus*) equal to it; claws of lateral toes reaching about to base of middle claw; hallux about as long as lateral toes, much stouter, its claw decidedly shorter than the digit; all the claws strongly curved, acute.

*Coloration.* Usually richly colored with sharply contrasted areas of black and orange, black and yellow, or black and chestnut; never entirely black; females (of some species) and young plainer, with olive-greenish hues prevailing.

*Range.* The whole of temperate and tropical America (most developed in tropical portions). (More than fifty species and subspecies.)

Notwithstanding the very great variation in relative length of wing and tail, extent of graduation of the latter; relative length and thickness of the bill and its degree of curvature; wing-formula, and all other external characters, my best efforts to trenchantly subdivide the genus

have resulted in failure, and consequently I am forced, against my inclination, to include a rather heterogeneous assemblage of species under one generic heading. Possibly a study of their internal structure may afford characters for subdivision.

Of all the species *I. icterus* seems to differ most structurally, this alone having a large naked postocular space and the feathers of the throat elongated and acicular; but that species is evidently related to *I. jamaicæ* and *I. crocomotus*, both of which are normal in the respects mentioned (though both, especially the former, have the feathers of the lower throat distinctly outlined and somewhat lengthened), have the tail relatively longer and much more graduated, and the tarsus relatively longer, thus apparently connecting *I. icterus* with other types of structure.

KEY TO THE SPECIES AND SUBSPECIES OF ICTERUS.

a. Tail entirely black (except concealed base<sup>1</sup>), or else distinctly bicolored (black and yellow or black and orange in sharply contrasted areas).

b. Tail unicolored (black, except at concealed base<sup>1</sup>).

c. Feathers of throat elongated, lanceolate or acicular, somewhat stiffened; culmen more than 1.25. (Caribbean coast of Colombia and Venezuela; islands of Trinidad, Jamaica, Porto Rico, and St. Thomas.)

*Icterus icterus*, adult male and female p. 263)

cc. Feathers of throat normal (short and blended); culmen less than 1.25.

d. Head, all round, uniform black or chestnut.

e. Back and scapulars uniform black.

f. Under parts of body and rump neither chestnut nor rufous-tawny.

g. Lesser and middle wing-coverts black, like rest of wing. (Island of Montserrat, Lesser Antilles.)

*Icterus oberi*, adult male and female (p. 265)

gg. Lesser and middle wing-coverts yellow or orange.

h. Wings with white markings. (Pacific coast of Guatemala.)

*Icterus maculi-alatus*, adult male and female (p. 265)

hh. Wings without white markings.

j. Breast yellow or orange.

k. Tail-coverts yellow; smaller (wing 92.2–99.1). (Bahamas.)

*Icterus northropi*, adult male and female (p. 266)

kk. Tail-coverts black; larger (wing 96.5–113.8). (Mexico; Guatemala.) *Icterus wagleri*, adult male and female (p. 267)

jj. Breast black.

k. Posterior half, or more, of under parts yellow. (Southern Mexico to Isthmus of Panama.)

*Icterus prothemelas*, adult male and female (p. 269)

kk. Less than posterior half of under parts yellow (or orange).

l. Rump, lesser and middle wing-coverts, thighs, etc., lemon yellow; under tail-coverts and flanks partly black.

m. Abdomen and flanks wholly black; under tail-coverts mostly black. (Island of Cuba, Greater Antilles.)

*Icterus hypomelas*, adult male and female (p. 271)

mm. Abdomen or flanks partly yellow; under tail-coverts mostly yellow.

<sup>1</sup>There is sometimes a whitish tip or terminal margin, especially to the lateral rectrices, these being worn away in summer plumage.

n. Upper rump black; flanks black, lower abdomen yellow; upper tail-coverts mostly black. (Island of Porto Rico, Greater Antilles.)

*Icterus portoricensis*, adult male and female (p. 272)

m. Whole rump yellow; flanks yellow, lower abdomen black (the feathers sometimes tipped with yellow); upper tail-coverts yellow. (Island of Haiti, Greater Antilles.)

*Icterus dominicensis*, adult male and female (p. 273)

ll. Rump, lesser and middle wing-coverts, thighs, lower abdomen, and under tail-coverts orange or orange-yellow. (Santa Lucia, Lesser Antilles.)

*Icterus laudabilis*, adult male and female (p. 274)

ff. Under parts of body and rump chestnut, ferruginous, or rufous-tawny.

g. Head and neck black, under parts of body, rump, and smaller wing-coverts chestnut. (Eastern United States, south to Isthmus of Panama) . . . . . *Icterus spurius*, adult male (p. 275)

gg. Head, neck, and chest dark chestnut; under parts of body, rump, and smaller wing-coverts ferruginous or rufous-tawny. (Island of Martinique, Lesser Antilles.)

*Icterus bonana*, adults and young (p. 279)

ce. Back and scapulars yellowish olive-green or olive-yellow.

f. Larger (tarsus more than 25.4); bill stouter, with culmen straight. (*Icterus melanocephalus*)

g. Smaller (wing averaging 98.5 in male, 91.9 in female); wings without distinct, if any, white edgings. (Southern Mexico)

*Icterus melanocephalus melanocephalus*, adult male and female (p. 280)

gg. Larger (wing averaging 100.6 in male, 96 in female); wings with distinct white edgings. (Northeastern Mexico, southern Texas.)

*Icterus melanocephalus auduboni*, adult male and female (p. 282)

ff. Smaller (tarsus less than 25.4), bill more slender, with culmen distinctly curved terminally. (Southern Mexico to Isthmus of Panama.)

*Icterus prothemelas*, immature (p. 289)

dd. Head orange, yellow, or olive-green, with black throat and capistrum.

e. Back and scapulars uniform black.

f. Breast spotted with black (at least laterally) (*Icterus pectoralis*.)

g. Larger (wing averaging 102.1) (Southern Mexico to Salvador.)

*Icterus pectoralis pectoralis*, adult male and female (p. 283)

gg. Smaller (wing averaging 97.5) (Western Nicaragua and Costa Rica)

*Icterus pectoralis spinachi*, adult male and female (p. 284)

ff. Breast not spotted

g. Lesser and middle wing-coverts orange or yellow, much larger, with very stout bill and straight culmen; sexes alike in color. (*Icterus gularis*)

h. Larger (wing averaging 125 in male, 113.8 in female); under parts of body, etc., more yellowish orange or orange-yellow. (State of Oaxaca, southern Mexico, to Honduras and Salvador.)

*Icterus gularis gularis*, adult male and female (p. 284)

hh. Smaller (wing averaging not more than 114.3 in male, 108.2 in female); under parts of body, etc., more intense orange.

i. Slightly larger (wing averaging 114.3 in male, 108.2 in female); maxilla relatively deeper, and the orange color averaging less intense. (States of Vera Cruz, Puebla, San Luis Potosi, and Tamaulipas, eastern Mexico)

*Icterus gularis tamaulipensis*, adult male and female (p. 286)

- ii. Slightly smaller (wing averaging 113 in male, 104 in female); maxilla relatively shallower, and orange color averaging more intense. (Yucatan; British Honduras?)

*Icterus gularis yucatanensis*, adult male and female (p. 287)

- gg. Lesser wing-coverts black, middle coverts white; much smaller, with slender and decurved bill; sexes very different in color. (*Icterus cucullatus*.)

- h. Forehead black (at least anteriorly and laterally).

- i. Forehead with less black, the orange or orange-yellow touching base of exposed culmen.

- j. Under parts of body, hindneck, etc., decided orange. (Southern Mexico, north along eastern edge of the plateau to Nuevo Leon.)

*Icterus cucullatus cucullatus*, adult male (p. 287)

- jj. Under parts of body, hindneck, etc., orange-yellow. (Southern Texas and coast plain of Tamaulipas.)

*Icterus cucullatus sennetti*, adult male (p. 289)

- ii. Forehead with more black, the orange or yellow not touching base of exposed culmen.

- j. Under parts of body, hindneck, etc., rich orange or orange-red; larger (wing averaging 87.5 or more, tail 92 or more).

- k. Larger, with smaller bill (wing averaging 88, tail 94.5, exposed culmen 18.2). (Peninsula of Yucatan, including Campeche.)

*Icterus cucullatus igneus*, adult male (p. 291)

- kk. Smaller, with larger bill (wing averaging 87.5, tail 92, exposed culmen 19). (Island of Cozumel.)

*Icterus cucullatus cozumelæ*, adult male (p. 292)

- jj. Under parts of body, hindneck, etc., chrome or saffron yellow; smaller (wing averaging 84, tail 89). (Island of Mujeres, Yucatan.)

*Icterus cucullatus duplexus*, adult male (p. 292)

- hh. Forehead wholly yellow. (Northwestern Mexico; Lower California; southern California; southern Arizona.)

*Icterus cucullatus nelsoni*, adult male (p. 290)

- ee. Back and scapulars not uniform black.

- f. Forehead and at least anterior part of auricular region black; wing-coverts without any white.

- g. Larger (wing 86.4 to 111.8); general color, including back, orange-yellow.

- h. Crown and occiput orange-yellow. (Southern Mexico to Colombia and Venezuela.)

*Icterus giraudii*, adult male and female (p. 293)

- hh. Crown and occiput black, like forehead. (Gualan, Guatemala.)

*Icterus gualanensis*, adult male (and female?) (p. 295)

- gg. Smaller (wing less than 86.4); general color lemon-yellow or pale olive-yellow below, more olivaceous on back, etc. (Southern Mexico to Isthmus of Panama.)

*Icterus prothemelas*, young and immature (p. 269)

- ff. Forehead and whole of auricular region orange, yellow or olive-green; wing-coverts marked with white.

- g. Outer webs of greater wing-coverts only partly white

- h. Middle wing-coverts white, or much paler orange or yellow than lesser coverts, concealed bases of greater coverts white

- i. Back distinctly streaked or spotted with black; bill shorter (exposed culmen not more than 23.1), general color bright yellow or orange.

- j. Larger (wing averaging 107.2); back more broadly streaked or spotted with black (the black sometimes prevailing); orange color less intense, never (?) inclining to scarlet on head. (State of Oaxaca, southern Mexico, to Nicaragua.)

*Icterus sclateri*, adult male (p. 297)

- jj. Smaller (wing averaging 100.8); back more narrowly streaked with black; orange color more intense, frequently inclining to scarlet on head.<sup>1</sup> (Southern plateau and Pacific coast district of Mexico.) . . . *Icterus pustulatus*, adult male (p. 295)

- ii. Back very sparsely and narrowly, or not at all, streaked with black.

- j. Larger (wing more than 100, exposed culmen more than 24); middle wing-coverts pale yellow; general color yellow, never orange. (Tres Marias islands, n. w. Mexico.)

*Icterus graysoni*, adult male (p. 298)

- jj. Smaller (wing less than 95, exposed culmen less than 20); middle wing-coverts white; general color rich orange, rarely orange-yellow. (Yucatan.)

*Icterus curatus*, adult male (p. 299)

- hh. Middle wing-coverts bright lemon-yellow, like lesser coverts; concealed bases of greater coverts black. (*Icterus xanthornus*.)

- i. Bill much shorter (culmen of male not more than 25.4, averaging 22.3). (Caribbean coast district of Colombia, Venezuela, and Guiana; Trinidad; Isthmus of Panama?)

*Icterus xanthornus xanthornus*, adult male and female (p. 300)

- ii. Bill much longer (culmen 25.9-27.9, averaging 26.9). (Island of Curaçao, Caribbean Sea.)

*Icterus xanthornus curacaoensis*, adult male and female (p. 303)

- gg. Outer webs of greater wing-coverts entirely white.

- h. Pileum, hindneck, back, and rump yellowish olive-green. (Island of Jamaica, Greater Antilles.)

*Icterus leucopteryx*, adult male and female (p. 303)

- hh. Pileum, hindneck, and rump yellowish.

- i. Yellow of pileum, etc., very slightly, if at all, tinged with olive.

(Island of Saint Croix, Greater Antilles.)



- e. Head entirely black; lateral rectrices orange or yellow with black sub-basal space; outer webs of greater wing-coverts black basally. (Eastern North America, south in winter to Colombia)

*Icterus galbula*, adult male (p. 310)

- ee. Head partly yellow or orange; lateral rectrices orange or yellow with black or dusky terminal space; outer webs of greater wing-coverts wholly white.

- f. Auricular region, rump, sides, and flanks orange or yellow. (Western United States, south in winter over Mexican plateau.)

*Icterus bullockii*, adult male (p. 314)

- ff. Auricular region, rump, sides, and flanks black. (Southern portion of Mexican plateau.) ..... *Icterus abeillei*, adult male (p. 318)

- aa. Tail neither entirely black nor distinctly bicolored (mostly plain olivaceous or dusky).

- b. Throat black or dusky.

- c. Larger (wing more than 78.7).

- d. Wing 101.6 or more.

- e. Pileum dull orange; greater wing-coverts narrowly edged with white terminally ..... *Icterus gularis* and subspecies, immature (p. 284)

- ee. Pileum olive-green; greater wing-coverts broadly edged with white for terminal half or more. (Jamaica.) *Icterus leucopteryx*, young (p. 304)

- dd. Wing less than 101.6.

- e. Under parts mostly orange or yellow.

- f. Back without any black.

- g. Pileum black or partly black.

- h. Back and rump olive-green; rectrices edged with olive-green; pale margins to greater wing-coverts and remiges narrower.

*Icterus melanocephalus melanocephalus*, immature (p. 281)

- hh. Back and rump grayish (tinged with olive-green); rectrices edged with grayish; pale margins to greater wing-coverts and remiges broader ... *Icterus melanocephalus audubonii*, immature (p. 282)

- gg. Pileum yellowish, olive-greenish, or orange.

- h. Scapulars yellowish olive-green.

- i. Deeper olive-green above, brighter yellow below.

*Icterus xanthornus xanthornus*, immature (p. 301)

- ii. Paler, both above and below.

*Icterus xanthornus eurascoensis*, immature (p. 303)

- hh. Scapulars grayish or dusky.

- i. Pileum orange; back dull orange, tinged with olive-green.

*Icterus auratus*, immature (Addenda)

- ii. Pileum olive-greenish; back dusky grayish or grayish olive-green.

- j. Pileum lighter, more yellowish, olive-green; under parts more saffron yellow; tail longer (about 88.9).

*Icterus cucullatus* and subspecies, immature male (p. 288)

- jj. Pileum darker olive-green; under parts more olive-yellow; tail shorter (about 67.3). *Icterus spurius*, immature male (p. 275)

- ff. Back with more or less of black.

- g. Tail more than 78.7.

- h. Pileum streaked with black or dusky; sides of head and neck grayish ..... *Icterus parisorum*, immature male and (sometimes) adult female (p. 309)

- hh. Pileum not streaked; sides of head and neck yellow or orange.

- i. Wing-edgings white and grayish; middle wing-coverts white, or mostly so; culmen very slightly curved.

- j. Cheeks cadmium-orange or orange-red; smaller.

*Icterus pustulatus*, adult female and immature male (p. 296)

- jj. Cheeks yellow; larger.

- k. Back conspicuously (sometimes very broadly) streaked with black; exposed culmen not more than 20.3.

*Icterus sclateri*, adult female and immature male (p. 297)

- kk. Back narrowly and sparsely streaked (streaks sometimes obsolete); exposed culmen about 24.1.

*Icterus graysonii*, adult female and immature male (p. 299)

- ii. Wing-edgings pale yellowish; middle wing-coverts dull yellowish; culmen strongly curved....*Icterus wagleri*, immature (p. 267)

- gg. Tail not more than 78.7.

- h. Sides, flanks, and upper tail-coverts grayish.

*Icterus abeillei*, adult female and immature male (p. 318)

- hh. Sides, flanks, and upper tail-coverts dull orange or yellowish.

- i. Pileum without streaks or spots of black; back paler, grayer; rump pale brownish gray.

*Icterus bullockii*, adult female (sometimes) and immature male (p. 315)

- ii. Pileum streaked or spotted with black (sometimes uniform black); back darker, more olivaceous; rump fulvescent.

*Icterus galbula*, adult female and immature male (p. 311)

- bb. Throat not black nor dusky.

- c. Wing 78.7 or more.

- d. Wing more than 101.6.

- e. Breast yellowish, dull orange, or whitish.

- f. Wings without white markings.

- g. Pileum and back dull saffron yellowish; bill stouter.

*Icterus giraudii*, young (p. 293)

- gg. Pileum and back olive-greenish or dull olive.

- h. Pileum and back olive-greenish; under parts canary yellow; bill straighter....*Icterus melanocephalus melanocephalus*, young (p. 281)

- hh. Pileum and back dull brownish olive; under parts dull Naples yellow.

*Icterus wagleri*, young (p. 267)



- l. Breast dull lemon or gamboge yellow.  
*Icterus cucullatus sennetti*, adult female (p. 289)  
*Icterus cucullatus nelsoni*, adult female (p. 290)
- ll. Breast orange-yellow or cadmium yellow.  
*Icterus cucullatus igneus*, adult female (p. 291)
- jj. Back and scapulars olive-green.  
k. Darker; bill smaller.  
*Icterus xanthornus xanthornus*, young (p. 301)
- kk. Paler; bill larger.  
*Icterus xanthornus curasoensis*, young (p. 303)
- hh. Tail not more than 81.3.
  - i. Auricular region dull orange or yellowish (rarely pinkish); an orange, yellowish, or (rarely) pinkish superciliary stripe; upper parts paler and grayer.....*Icterus bullockii*, adult female (usually) and immature male (p. 315)
  - ii. Auricular region dull olive or dusky; no orange, yellowish, or pinkish superciliary stripe; upper parts darker and browner.  
*Icterus galbula*, adult female (sometimes) and immature male (p. 311).
- ee. Breast deep olive-greenish, deep wax-yellowish, or brownish.
- f. Breast brownish.
- g. Greater wing-coverts edged with pale yellowish; middle wing-coverts pale yellow; throat distinctly brownish.  
*Icterus dominicensis*, young (p. 273)
- gg. Greater wing-coverts edged with pale brownish; middle wing-coverts light olive-greenish; throat yellowish.  
*Icterus portoricensis*, young (p. 272)
- ff. Breast deep yellowish olive, olive-greenish, or deep wax yellow.
  - g. Breast deep olive-greenish or yellowish olive; forehead dull brownish; chin dusky; tail grayish olive ...*Icterus hypomelas*, young (p. 271)
  - gg. Breast deep wax-yellowish, like rest of under parts; forehead similar, but browner; tail yellowish olive....*Icterus oberi*, young (p. 265)

## ICTERUS ICTERUS (Linnæus).

## TROUPIAL.

*Adults (sexes alike).*—Head, neck (except lower hindneck), chest, back, scapulars, wings, and tail, black, the wings relieved by a broad white stripe or longitudinal patch, involving the middle coverts, innermost greater coverts, and broad edgings to innermost secondaries or tertials; lesser wing-coverts, broad collar across lower hindneck and upper back, sides of chest and under parts posterior to chest, rich orange yellow, varying to lemon yellow or orange; bill black, with basal half of mandible bluish gray (pale grayish blue in life); iris light yellow or yellowish white; legs and feet grayish dusky (bluish gray in life?); length (skins), 228.6–264.2 (246.1); wing, 110.7–117.1 (115.1); tail, 94.5–107.2 (100.8); culmen, from base, 32.5–36.1 (34.5); depth of bill at base, 12.2–12.7 (12.2); tarsus, 31.5–33.5 (32.3); middle toe, 22.4–24.6 (23.6).<sup>1</sup>

Northeastern coast of South America, in Colombia (Valle Dupar,

<sup>1</sup>Seven specimens, only two of them with sex determined.

etc., province Santa Marta), Venezuela (La Guayra; Carupano; Guanaguana; Margarita I.), Guiana?, and northeastern Brazil?, together with outlying islands of Margarita, Trinidad, and Curaçao. Introduced into West Indian islands of St. Thomas, Porto Rico, and Jamaica. Said to have occurred at Charleston, South Carolina.

[*Oriolus*] *icterus* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 161 (based on *Le Troupiale vulgaire* Daubenton, Pl. Enl., pl. 532).—GMELIN, Syst. Nat., i, 1788, 384.—LATHAM, Index Orn., i, 1790, 176.

*Icterus icterus* RIDGWAY, Proc. U. S. Nat. Mus., viii, sig. 23, Sept. 2, 1885, 355.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 502.—CORY, Auk., iii, 1886, 219 (synonymy and descr.); Birds W. I., 1889, 106; Cat. W. I. Birds, 1892, 110, 146 (Porto Rico, Jamaica, and St. Thomas; said to be introduced).—SCOTT (W. E. D.), Auk., x, 1893, 178 (apparently not now in Jamaica).—HARTERT, Ibis, 1893, 297 (Aruba; crit.; song), 317 (Curaçao; crit.).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 466.—ROBINSON, Flying Trip to Tropica, 1895, 160 (Magdalena R., Colombia), 165 (Curaçao); Proc. U. S. Nat. Mus., xviii, 1896, 674 (Margarita I., Venezuela).—NEHELING, Our Native Birds, etc., ii, 1896, 266.

[*Icterus*] *icterus* RIDGWAY, Man. N. Am. Birds, 1887, 373.

*Icterus vulgaris* DAUDIN, Traité d'Orn., ii, 1800, 340 (based on *Le Troupiale vulgaire* Daubenton, Pl. Enl., pl. 532).—AUDUBON, Birds Am., oct. ed., vii, 1844, 357, pl. 499 (Charleston, South Carolina).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 332 (South Carolina); Rep. Pacific R. R. Surv., ix, 1858, 542 La Guayra, Venezuela; Cat. N. Am. Birds, 1859, no. 408).—SCLATER, Cat. Am. Birds, 1862, 133 ("South America"); Ibis, 1863, 369 (monogr.); Cat. Birds Brit. Mus., xi, 1866, 382 (Sierra Nevada de Santa Marta, and Valle Dupar, prov. Santa Marta, Colombia; Carúpano, Venezuela).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 46 (monogr.; Venezuela; Guiana; Rio Negro; n. Brazil; Jamaica; southern U. S.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 167 (Venezuela).—FINCH, Proc. Zool. Soc. Lond., 1870, 578 (Trinidad).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 184.—GUNDLACH, Anal. Soc. Esp. Hist. Nat., vii, 1878, 209 (Porto Rico).—

## ICTERUS OBERI Lawrence.

## MONTSERRAT ORIOLE.

*Adult male*.—Head, neck, chest, back, scapulars, wings, and tail uniform black; upper rump lemon yellow, tinged with ochre-yellow or yellowish russet, the rest of rump ochre-yellow or yellowish russet superficially, lemon yellow beneath the surface; the upper tail-coverts deeper, more russet, with concealed bases light lemon or canary yellow; under parts (posterior to chest) mixed deep ochraceous, ochre-yellow and canary yellow, the last on basal portion of the feathers, but exposed in places, especially on sides; thighs clear yellow; under wing-coverts light yellow; bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet grayish dusky (grayish blue in life?); length (skins), 213.4–218.4 (215.9); wing, 89.7–89.9; tail, 95.8–97 (96.3); culmen, from base, 24.9–25.1; depth of bill at base, 8.9–9.1; tarsus (one specimen), 25.4; middle toe, 16.3–17.3 (16.8).<sup>1</sup>

*Adult (?) female*.<sup>2</sup>—Above yellowish olive-green, duller and grayer on back and scapulars, tinged with saffron yellowish on forehead; wings grayish dusky with rather broad edgings of light olive; lores grayish dusky; under parts wax yellow or gallstone yellow, tinged with olive-green, especially on sides and flanks; length (skin), 199.4; wing, 82; tail, 87.6; culmen, from base, 22.4; depth of bill at base, 8.6; tarsus, 24.1; middle toe, 15.7.<sup>3</sup>

*Immature male (second year ?)*.—Similar to the supposed adult female, as described above, but back grayer, lores deep black, and wing-edgings more buffy or cinnamomeous.

Island of Montserrat, Lesser Antilles.

*Icterus oberi* LAWRENCE, Proc. U. S. Nat. Mus., iii, sig. 22, Nov. 23, 1880, '351 (Montserrat, Lesser Antilles; coll. U. S. Nat. Mus.).—GRISDALE, Ibis, 1882, 487, pl. 13.—SCLATER, Ibis, 1883, 362 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 372.—CORY, Auk, iii, 1886, 218 (synonymy and description); Birds W. I., 1889, 105; Cat. W. I. Birds, 1892, 15, 110, 132.

[*Icterus*] *oberi* CORY, List Birds W. I., 1885, 13.

## ICTERUS MACULI-ALATUS Cassin.

## BAR-WINGED ORIOLE.

*Adults (sexes alike)*.—Head, neck, median portion of upper chest, back, scapulars, wings (except lesser and middle coverts), and tail black; outer web of greater wing-coverts tipped with white, forming a band, and terminal half, or more, of longer primaries edged with white; rest of plumage deep lemon or gamboge yellow, the under

<sup>1</sup> Two specimens.

<sup>2</sup> Possibly the sexes are alike in this species, as in other West Indian forms.

<sup>3</sup> One specimen.

parts (especially the breast) and lesser wing-coverts more saffron yellow; bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet grayish horn color (bluish gray in life?); length (skin), 198.2; wing, 98.5; tail, 93.5; culmen, from base, 21.8; depth of bill at base, 9.1; tarsus, 23.9; middle toe, 15.7.<sup>1</sup>

Pacific slope of Guatemala (Vera Paz; Aguna; Escuintla; Volcan de Fuego; Volcan de Agua; San Pedro Martir).

*Icterus maculirostris* CASSIN, Proc. Ac. Nat. Sci. Phila., iii., 1847, 332 ("Vera Cruz," i. e., Vera Paz, Guatemala; coll. Acad. Nat. Sci. Phila.); Journ. Ac. Nat. Sci., Phila., 2d ser., i., pt. ii, 1848, 137, pl. 16, fig. 1. SCLATER, Cat. Am. Birds, 1862, 132 (Aguna and Escuintla, Guatemala); Ibis, 1883, 363 (monogr.; Cat. Birds, Brit. Mus., xi, 1886, 373 (Volcan de Fuego, Volcan de Agua, San Pedro Martir, Escuintla, and Aguna, Guatemala).—SALVIN and SCLATER, Ibis, 1860, 398 (Volcan de Fuego).—(???) DUGES, La Naturaleza, i, 1868, 139 (Guanajuato, Mexico).—SALVIN and GOODMAN, Biol. Centr. Am. Aves, i, 1887, 467.

[*Icterus*] *maculirostris* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

[*Pendulmona*] *maculirostris* BONAPARTE, Consp. Av., i, 1850, 433 ("Mexico").

*Pendulmona maculirostris* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 56 (monogr.; Vera Paz).

#### ICTERUS NORTHROPI Allen.

##### NORTHROP'S ORIOLE.

*Adult male*.—Head, neck, upper chest, back, and scapulars uniform deep black; whole rump, upper tail-coverts, lesser and middle wing-coverts, and under parts, posterior to upper chest, lemon yellow, rather paler on middle wing-coverts, especially the innermost; wings (except middle and lesser coverts) and tail black, rather duller than that of head, neck, etc.; bill black, with basal portion of mandible bluish gray (pale grayish blue in life); legs and feet grayish dusky (grayish blue in life?); length (skin), 213.4; wing, 99.1; tail, 89.4; culmen, from base, 23.4; depth of bill at base, 8.6; tarsus, 25.1; middle toe, 18.3.<sup>2</sup>

*Adult female*. Similar to the adult male, but coloration rather duller; the black less intense; interscapulars narrowly margined with olive grayish; greater wing-coverts narrowly tipped with pale grayish, and remiges narrowly edged with the same; yellow of rump tinged with olive, the longer upper tail-coverts light yellowish olive with dusky mesial streaks; length (skin), 199.7; wing, 92.2; tail, 91.4; depth of bill at base, 8.6; tarsus, 25.4; middle toe, 18.<sup>3</sup>

*Immature male and female (second year?)*.—Pileum and hindneck dull yellowish olive, more grayish posteriorly; back and scapulars rather light grayish olive; rump light yellowish olive, the upper tail coverts darker and more grayish; lesser wing coverts light yellowish olive; middle coverts grayish dusky basally, broadly tipped with pale yel-

<sup>1</sup>One specimen, with sex undetermined.

<sup>2</sup>One specimen.

<sup>3</sup>One specimen, with tip of maxilla broken off.

lowish; rest of wings, and tail, deep brownish gray or hair brown, with paler edgings; under parts lemon yellow, shaded with olive anteriorly and laterally; lores blackish. Older specimens are variously intermediate between this plumage and the fully adult livery.

Bahamas (islands of Andros and Abaco.)

*Icterus northropi* ALLEN, Auk, vii, no. 4, Oct., 1890, 344 (Andros Island, Bahamas; coll. Am. Mus. Nat. Hist.).—NORTHROP, Auk, viii, 1891, 71, pl. 1.—CORY, Auk, viii, 1891, 350 (Abaco I., Bahamas); Cat. W. I. Birds, 1892, 15, 110, 127, 146 (Andros and Abaco islands).

### ICTERUS WAGLERI Sclater.

#### WAGLER'S ORIOLE.

*Adults (sexes alike).*—Head, neck, chest, back, scapulars, wings (except lesser and middle coverts), tail, and upper and under tail-coverts uniform black; rest of plumage rich saffron or cadmium yellow, more or less tinged with chestnut next to black of chest, where the chestnut sometimes forms a distinct band; bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); iris dark brown; legs and feet grayish dusky (bluish gray in life?).<sup>1</sup>

*Immature (second year?).*—Pileum, hindneck, rump, upper tail-coverts, and lesser wing-coverts plain olivaceous saffron yellow; middle wing-coverts similar at tips, the underlying portion blackish; back and scapulars yellowish olive-green, narrowly streaked with dusky; greater wing-coverts and secondaries dusky, edged with pale yellowish gray (more broadly, the edgings more yellowish, on the former); primaries dusky, narrowly edged with dull whitish; four middle rectrices dusky; next pair dusky with outer web mostly olive, edged with saffron yellowish; outermost rectrices dull saffron yellowish, dusky terminally; lores, greater part of malar region, chin, throat, and median portion of chest black; rest of under parts and sides of head (except as described) rich saffron or Indian yellow.

*Younger (first winter?).*—Similar, but without black on chest and throat (which are yellow, like rest of under parts) and upper parts less yellowish, the back, scapulars, and wing-edgings olive-gray (the two former narrowly streaked with black), the pileum and hindneck yellowish olive-gray, very indistinctly streaked with darker.

*Young (first plumage).*—Above plain rather light olive, slightly browner on back and scapulars, more yellowish olive on head, neck, lower rump, and upper tail-coverts; wings dusky with rather broad olive-buffy edgings; six middle tail-feathers dusky, edged with light yellowish olive, the lateral rectrices light olive on inner webs, their outer webs yellowish olive; under parts entirely dull light yellow, faintly shaded with olive across chest and along sides.

<sup>1</sup>“Base of under mandible lead color; tarsi and toes dusky olive.” (P. L. Jouy, manuscript.)

*Adult male*.—Length (skins), 210.8–229.9 (222.8); wing, 97.8–113.8 (104.9); tail, 101.1–122.2 (108.2); culmen, from base, 23.4–25.4 (24.6); depth of bill at base, 8.1–9.1 (8.6); tarsus, 24.1–25.9 (24.9); middle toe, 17.5–20.3 (18.3).<sup>1</sup>

*Adult female*.—Length (skins), 194.3–223.5 (207); wing, 96.5–100.1 (98); tail, 79.5–104.4 (93.5); culmen, from base, 22.9–24.4 (23.6); depth of bill at base, 8.1–8.4; tarsus, 23.4–25.1 (24.4); middle toe, 17.5–18.3 (18).<sup>2</sup>

From northern Mexico, in states of Sonora (Oposura, Alamos), Chihuahua (near Batopilas), Coahuila (Saltillo), and Nuevo Leon (Dos Arroyos), southward over nearly the whole of Mexico (except Yucatan) to Guatemala (Dueñas; Calderas; Volcan de Fuego; San Gerónimo; Hacienda Chancol, etc.).

*Ps[arocolius] flavigaster* (not *Pendulinus flavigaster* Vieillot, 1816) WAGLER, Isis, 1829, 756 (Mexico).

*Icterus dominicensis* (not *Oriolus dominicensis* LINNÆUS) SWAINSON, Philos. Mag., n. s., i, 1827, 436 (Temascaltepec, Mexico).

[*Pendulinus*] *dominicensis* BONAPARTE, Consp. Av., i, 1850, 432.

*Icterus wagleri* SCLATER, Proc. Zool. Soc. Lond., 1857, 7 (Mexico; coll. P. L. Sclater), 1859, 381 (Villa Alta, Oaxaca); Cat. Am. Birds, 1862, 131 (Mexico), Ibis, 1883, 362 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 372 (Oaxaca; Presidio, near Mazatlan; Dueñas, Calderas, and Volcan de Fuego, Guatemala).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 545 (Saltillo, Coahuila; Guatemala); ed. 1860 (Birds N. Am.), atlas, pl. 61, fig. 2; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19, pl. 19, fig. 2 (Saltillo, Coahuila); Cat. N. Am. Birds, 1859, no. 412.—SCLATER and SALVIN, Ibis, 1859, 20 (Dueñas, Guatemala).—SALVIN, Ibis, 1859, 468 (Volcan de Fuego; descr. nest).—FINSCH, Abh. Nat. Ver. Brem. 1870, 338 (Mazatlan).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 188, footnote, pl. 35, fig. 2.—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 279 (Mazatlan; Guadalajara; Tepic; Tepic, Oaxaca).—RIDGWAY, Not. N. Am. Birds, 1881, fig. 267. S. A. N. C.

[*Icterus*] *wagleri* SCLATER and SALVIN, Nom. Am. Neotr., 1873, 36.

[*Icterus*] *wagleri* RIDGWAY, Man. N. Am. Birds, 1887, 375.

*Icterus waglerii* SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 552 (hot region, Vera Cruz).

*Pendulinus wagleri* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 55 (monogr.; Coahuila; Mazatlan; San Gerónimo, Guatemala).

[*Icterus dominicensis*] var. *waglero*, BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 182.

*Icterus wagleri castaneopectus* BREWSTER, Auk, v, Jan., 1888, 91 (Oposura, Sonora; coll. W. Brewster).

### ICTERUS PROSTHEMELAS (Strickland).

#### LESSON'S ORIOLE.

Similar to *I. wagleri* but much smaller, black of chest extending over breast, and tail-coverts (both upper and lower) mostly yellow.<sup>1</sup>

*Adults (sexes alike).*—Head, neck, chest, upper breast (sometimes whole breast), back, scapulars, wings (except lesser and middle coverts), and tail black; rest of plumage deep lemon yellow, the yellow of the breast more or less tinged or mixed with chestnut next to edge of black pectoral area; longer tail-coverts usually more or less mixed with black, sometimes wholly black; bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet grayish dusky or dark grayish horn color (bluish gray in life?).

*Immature (second year?).*—Similar to adults, but back and scapulars yellowish olive-green<sup>2</sup> (some of the feathers with concealed central areas of black), the lower hindneck more yellowish olive-green, or olive-yellow (whole hindneck and occiput sometimes of this color).

*Young (first plumage).*—Forehead (more or less broadly), orbital region, auricular and malar regions (except sometimes posterior portion of the former), chin, throat, and median portion of upper chest dull black; rest of head and neck, together with back, scapulars, rump, and upper tail-coverts, dull olive-yellow or light yellowish olive-green, the back and scapulars more or less clouded or blotched with black; wings and tail dull black, the lesser and middle wing-coverts tipped with dull olive-yellow or light yellowish olive-green; under parts (except throat, etc.) light yellow (dull canary yellow or straw yellow).

*Adult male.*—Length (skins), 180.3–207 (191.3); wing, 78.5–93.5 (86.6); tail, 84.6–100.8 (93.2); culmen, from base, 19.1–21.3 (20.6); depth of bill at base, 7.1–8.1 (7.6); tarsus, 22.1–23.6 (22.9); middle toe, 14.7–17.8 (16.3).<sup>3</sup>

*Adult female.*—Length (skins), 180.3–195.6 (190.8); wing, 80.3–85.1 (83.1); tail, 84.1–90.7 (87.6); culmen, from base, 19.6–21.6 (20.6);

<sup>1</sup>The longer coverts sometimes black or partly so, especially the upper coverts.

<sup>2</sup>In this plumage very closely resembling in coloration adults of *I. melanocephalus*.

<sup>3</sup>Twenty-one specimens.





*Pendulinus prothemelas* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 56 (monogr.).

LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (Tucurriqui, Costa Rica).

FRANTZIUS, Journ. für Orn., 1869, 302 (Costa Rica).

[*Pendulinus*] *lessoni* BONAPARTE, Consp. Av., i, June 15, 1850, 432 (Mexico; based on *Troupiale noire à ventre jaune* Lesson, Traité d'Orn., 1831, no. 7).

*Pendulinus lessoni* PUCHERAN, Rev. et Mag. de Zool., 1854, 66 (crit.).

X[*anthornus*] *lessoni* CABANIS, Mus. Hein., i, Aug., 1851, 184 (Jalapa, Vera Cruz).

(?) *Icterus gualanensis* UNDERWOOD, Bull. Brit. Orn. Club, no. lv, June 30, 1898, lix (Gualan, Guatemala).

## ICTERUS HYPOMELAS (Bonaparte).

### CUBAN ORIOLE.

*Adults (sexes alike).*—General color uniform black; lesser and middle wing-coverts, rump, and thighs, lemon yellow; under wing-coverts and axillars slightly paler (canary) yellow; shorter under tail-coverts and tips (more or less extensive) of longer under tail-coverts dull (gallstone or saffron yellow); bill black, the mandible bluish gray (pale grayish blue in life) basally; legs and feet grayish dusky (bluish gray in life?).

*Immature (second year?).*—Head and neck dull olive-green becoming more or less dusky on fore part of head, especially from lores to chin inclusive (whole throat, chin, malar region, and lores sometimes uniform black); back and scapulars dull grayish olive-green, the feathers indistinctly darker centrally; rump more yellowish olive-green, more yellow on lower portion; lesser wing-coverts yellowish olive-green, middle coverts more yellowish, with a darker mesial streak; rest of wings, and tail, grayish dusky with edgings of pale olive-grayish or grayish buffy; under parts, except chin (and sometimes throat) plain olive-green, duller anteriorly, brighter or more yellowish posteriorly. [Older specimens variously intermediate in coloration between the immature plumage and the fully adult livery.]

*Adult male.*—Length (skins), 186.7–198.1 (190.8); wing, 94.2–100.0 (95.3); tail, 84.3–91.9 (88.6); culmen, from base, 20.3–22.4 (21.6); depth of bill at base, 8.1–9.1 (8.4); tarsus, 23.9–24.4 (24.1); middle toe, 15–17.3 (16.8).<sup>1</sup>

*Adult female.*—Length (skins), 176.5–198.1 (186.7); wing, 89.4–94.0 (91.9); tail, 81.3–92.7 (86.9); culmen, from base, 21.1–22.1 (21.6); depth of bill at base, 8.1–8.4 (8.1); tarsus, 22.9–24.4 (23.6); middle toe, 16–17.5 (16.8).<sup>1</sup>

Island of Cuba, Greater Antilles.

*Icterus dominicensis* (not *Oriolus dominicensis* Linnæus) VIGORS, Zool. Journ., i, 1828, 441 (Cuba).—LAWRENCE, Ann. Lyc. N. Y., vii, 1860, 268 (Cuba, crit.).—ALBRECHT, Journ. für Orn., 1861, 212 (Cuba).—SCLATER, Cat. A. B. Birds, 1862, 131, part (Cuba).

<sup>1</sup> Seven specimens.

- Xanthornus dominicensis* D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 115, pl. 19 *bus*.—GUNDLACH, Journ. Bost. Soc. N. H., vi, 1852, 318 (Cuba).—CABANIS, Journ. für Orn., 1856, 10.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).
- Icterus virescens* (not of Daudin, 1800) VIGORS, Zool. Journ., iii, Dec., 1827, 441 (near Havana, Cuba; coll. Zool. Soc. Lond.).
- (?) *Ps[arocolius] melanops* WAGLER, Isis, 1829, 759 (no locality).
- [*Pendulinus*] *hypomelas* BONAPARTE, Consp. Av., i, 1850, 433 (Cuba; "Mexico;" ex *Icterus hypomelas* Du BUS, manuscript).
- Pendulinus hypomelas* CAMBIN, Proc. Ac. Nat. Sci. Phila., 1867, 59 (monogr.).
- Xanthornus hypomelas* GUNDLACH, Repert. Fisico-Nat. Cuba, i, 1866, 287; Journ. für Orn., 1874, 128.
- Icterus hypomelas* SCLATER, Ibis, 1883, 360 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 370 (San Cristobal, Cuba).—CONY, Auk, iii, 1886, 215 (synonymy and diagnosis); Birds W. I., 1889, 102; Cat. W. I. Birds, 1892, 14, 110, 129 (Cuba; Isle of Pines).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 305 (habits, etc.; crit.).
- [*Icterus*] *hypomelas* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.—CONY, List Birds W. I., 1885, 13.
- Icterus dominicensis*, var. *hypomelas* BRYANT, Proc. Bost. Soc. N. H., xi, 1866, 254, footnote (crit.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 182, footnote.

## ICTERUS PORTORICENSIS (Bryant).

## PORTO RICAN ORIOLE.

*Adults (sexes alike)*.—Similar to *I. dominicensis*, but bill decidedly larger and relatively stouter, upper rump black, flanks black, and tail-coverts (especially the upper) partly black; similar also to *I. hypomelas*, but upper rump black, under tail-coverts mostly yellow, and lower part of abdomen yellow, the bill also much longer, middle toe longer, and tarsus shorter.

*Immature (second year?)*.—Very different from corresponding stage of *I. hypomelas*. Head and neck (except pileum and hindneck) gall-

*Adult female*.—Length (skins), 199.7–209.6 (205); wing, 90.2–93.5 (91.7); tail, 79.8–86.4 (83.1); culmen, from base, 24.4–25.1 (24.6); depth of bill at base (one specimen), 8.1; tarsus, 23.1–23.4; middle toe, 18–19.1 (18.5).<sup>1</sup>

Island of Porto Rico, Greater Antilles.

*Icterus dominicensis* (not *Oriolus dominicensis* Linnæus) TAYLOR, Ibis, 1864, 167 (Porto Rico).

*Icterus dominicensis* var. *portoricensis* BRYANT, Proc. Bost. Soc. N. H., x, 1866, 254 (Porto Rico).—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 597.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 182, footnote.

*Pendulinus portoricensis* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 58 (monogr.).

*Icterus portoricensis* SCLATER, Ibis, 1883, 361 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 371 (n. side Porto Rico).—CORY, Auk, iii, 1886, 217 (synonymy and diagnosis); Birds W. I., 1889, 104 (do.); Cat. W. I. Birds, 1892, 15, 110, 132 (Porto Rico).

[*Icterus*] *portoricensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.—CORY, List Birds W. I., 1885, 13.

*Xanthornus portoricensis* GÜNDLACH, Anal. Soc. Esp. Hist. Nat., vii, 1878, 210 (Porto Rico).

ICTERUS DOMINICENSIS (Linnæus).

HAITIAN ORIOLE.

*Adults (sexes alike)*.—Similar to *I. hypomelas*, but upper and under tail-coverts wholly yellow and flanks more or less yellow; bill longer and more slender.

*Young (first plumage)*.—Head and neck brown, becoming grayer on chin and throat; back and scapulars more grayish (broccoli) brown; lower rump light dull buffy yellowish, gradually shading into color of back; lesser and middle wing-coverts light yellow, the former tinged with brownish; greater coverts dusky, broadly edged with pale yellow; rest of wings grayish dusky with pale edgings, these nearly white on terminal portion of longer primaries; tail olive with lighter, more yellowish olive, edgings; under parts canary yellow posteriorly, shading into wood brownish on breast, etc.

*Adult male*.—Length (skins), 185.4–207 (196.3); wing, 91.4–99.1 (96.8); tail, 82–90.9 (87.6); culmen, from base, 21.8–24.4 (23.1); depth of bill at base, 7.6–8.4 (7.9); tarsus, 23.4–24.9 (24.1); middle toe, 15.7–19.3 (17.8).<sup>2</sup>

*Adult female*.—Length (skin), 194.3; wing, 91.9; tail, 84.1; culmen, from base, 22.1; tarsus, 24.1; middle toe, 18.3.<sup>3</sup>

Island of Haiti, Greater Antilles.

[*Oriolus*] *dominicensis* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 163 (based on *Carouge de St. Domingue* Daubenton, Pl. Enl., pl. 5, fig. 2).—GMELIN, Syst. Nat., i, pt. i, 1788, 391.—LATHAM, Index Orn., i, 1790, 182.

<sup>1</sup> Two specimens.

<sup>2</sup> Five specimens, three of them not sexed, but *probably* males.

<sup>3</sup> One specimen.

- Icterus dominicensis* DAUDIN, *Traité d'Orn.*, ii, 1800, 335.—TEMMINCK, *Cat. Syst.*, 1807, 48.—SALLÉ, *Proc. Zool. Soc. Lond.*, 1857, 232 (Santo Domingo).—SCLATER, *Cat. Am. Birds*, 1862, 131, part (Santo Domingo); *Ibis*, 1883, 361 (monogr.); *Cat. Birds Brit. Mus.*, xi, 1886, 371 (Puerto Plata, Santo Domingo; Haiti).—BRYANT, *Proc. Bost. Soc. N. H.*, xi, 1866, 94 (Haiti; Santo Domingo).—CORY, *Bull. Nutt. Orn. Club*, vi, 1881, 152 (Haiti); *Birds Haiti and San Dom.*, 1885, 71, pl. (12); *Auk*, iii, 1886, 216 (synonymy and diagnosis); *Birds W. I.*, 1889, 103 (do.); *Cat. W. I. Birds*, 1892, 14, 110, 131 (Haiti; Santo Domingo).—TRISTRAM, *Ibis*, 1884, 168 (Samana, Santo Domingo).—CHERRIE, *Contr. Orn. San Domingo*, 1896, 16.
- [*Icterus*] *dominicensis* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 36.—CORY, *List Birds W. I.*, 1885, 13.
- Xanthornus dominicensis* CABANIS, *Journ. für Orn.*, 1856, 10.
- [*Pendulinus*] *dominicensis* BONAPARTE, *Consp. Av.*, i, 1850, 432.
- Pendulinus dominicensis* CASSIN, *Proc. Ac. Nat. Sci. Phila.*, 1867, 58 (monogr.; Port au Prince, Haiti).
- Icterus dominicensis*, var. *dominicensis* BAIRD, BREWER, and RIDGWAY, *Hist. N. Am. Birds*, ii, 1874, 182, footnote.
- Pendulinus flavigaster* VIEILLLOT *Nouv. Dict. d'Hist. Nat.*, v. 1816, 317 (= *Oriolus dominicensis* Linnæus).
- P[endulinus] flavigaster* VIEILLLOT, *Enc. Méth.*, ii, 1823, 705.

## ICTERUS LAUDABILIS Sclater.

## SANTA LUCIA ORIOLE.

*Adults (sexes alike).*—General color uniform deep black; lesser and middle wing-coverts, whole rump, upper tail-coverts, flanks, lower abdomen, anal region, and under tail-coverts, cadmium yellow varying to cadmium orange;<sup>1</sup> under wing-coverts pale yellow, deepening into brighter yellow or orange along edge of wing; bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet dusky gray (grayish blue in life?).

*Immature (sexes alike).*—Head, neck, breast, back, wings, and



*Icterus laudabilis* SCLATER, Proc. Zool. Soc. Lond., 1871, 270, pl. 21 (Santa Lucia, Lesser Antilles; coll. P. L. Sclater); 1872, 649; 1889, 395; Ibis, 1883, 361 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 372.—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 166.—CORY, Auk, iii, 1886, 217 (synonymy and diagnosis); Birds W. I., 1889, 104; Cat. W. I. Birds, 1892, 15, 110, 133.—RIDGWAY, Proc. U. S. Nat. Mus., xii, 1890, 130.

[*Icterus*] *laudabilis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.—CORY, List Birds W. I., 1885, 13.

### ICTERUS SPURIUS (Linnaeus).

#### ORCHARD ORIOLE.

*Adult male in spring and summer.*—Head, neck, median portion of upper chest, back, and scapulars, uniform black; wings (except lesser and middle coverts) black, with narrow whitish edgings; tail black, the extreme base abruptly yellowish; rump, upper tail-coverts, lesser and middle wing-coverts, and under parts of body (including under wing-coverts) uniform rich chestnut, often deepening into bay on breast, etc., the rump and upper tail-coverts inclining to burnt sienna; bill black with basal half of mandible bluish (pale grayish blue or bluish white in life); iris brown; legs and feet dusky horn color in dried skins.

*Adult male in autumn and winter.*—Similar to the spring and summer plumage, but scapulars and interscapulars (sometimes feathers of head and neck also) margined with buffy grayish, light olive, or chestnut, and those of the chestnut under parts (sometimes) indistinctly tipped or margined with yellowish.

*Adult female in spring and summer.*—Above yellowish olive-green, becoming lighter and more yellowish on upper tail-coverts and tail, the back duller, with feathers indistinctly darker centrally; under parts dull canary yellow, tinged with olive on sides and flanks; wings dusky, all the feathers margined with light olive-grayish (these edgings approaching white on longer primaries), the middle and greater coverts broadly tipped with dull whitish, forming two bands.

*Male in second year.*—Similar to adult female, but lores, anterior portion of malar region, chin, and throat black.<sup>1</sup>

*Young (both sexes) in first plumage.*—Similar to the adult female, but lighter wing-markings tinged with buff.

*Adult male.*—Length (skins), 147.3–165.1 (157.7); wing, 73.9–82.6 (78.2); tail, 63.5–74.9 (69.1); exposed culmen, 15–17.5 (16.3); depth of bill at base, 6.6–7.9 (7.6); tarsus, 20.6–22.9 (21.6); middle toe, 13–16.5 (15).<sup>2</sup>

*Adult female.*—Length (skins), 149.9–160 (154.4); wing, 68.6–77.5

<sup>1</sup> Breeds in this plumage. Males more than one year old, but not yet fully adult, are variously intermediate between this black-throated yellow plumage and the fully adult livery as described above.

<sup>2</sup> Thirty specimens.

(73.2); tail, 63.5-73.7 (66.5); exposed culmen, 15.2-17.3 (15.7); depth of bill at base, 6.6-7.6 (7.4); tarsus, 20.6-23.1 (21.6); middle toe, 13.2-15.5 (14.5).<sup>1</sup>

Eastern United States and whole of Mexico; breeding from the Gulf coast (northern Florida to southern Texas) north to Connecticut, southern New York, southern Ontario (Hamilton, London, Dunnville), southern Michigan (south of 43°), southern Wisconsin, central Minnesota, and southern North Dakota, but occurring irregularly or casually as far north as southern New Brunswick, Maine (Androscoggin, Knox, and Washington counties), and Vermont (Middlebury); west to across the Great Plains; south in winter over whole of Mexico and Central America to northern Colombia (Cartagena, Rio Atrato); Cuba. (Southern limit of breeding range unknown, but probably extending over part of Mexico, possibly to Guatemala.)<sup>2</sup>

[*Oriolus*] *spurius* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 162 (based on *Icterus minor* Catesby, Carolina, i, 49; *Icterus minor spurius* Brisson).—GMELIN, Syst. Nat., i, pt. i, 1788, 389.—LATHAM, Index Orn., i, 1790, 180.

*Icterus spurius* TEMMINCK, Cat. Syst., 1807, 47.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iii, 1823, 363; Ann. Lyc. N. Y., ii, 1828, 51; Geog. and Comp. List, 1838, 29.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 165.—AUDUBON, Orn. Biog., i, 1831, 221, pl. 42; v. 1839, 485; Synopsis, 1839, 144; Birds Am., oct. ed., iv, 1842, 46, pl. 219.—GIRAUD, Birds Long I., 1844, 144.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 547; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19 (w. Texas); Cat. N. Am. Birds, 1859, no. 414.—SCLATER, Proc. Zool. Soc. Lond., 1856, 301 (Cordova, Vera Cruz); 1859, 365 (Jalapa, Vera Cruz), 390 (Oaxaca, Mar.); Cat. Am. Birds, 1862, 130 (Pennsylvania); Ibis, 1883, 357 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 366 (Jalapa, Vera

<sup>1</sup> Nine specimens.

Dividing the collection of breeding birds, or those obtained during the months of April to first half of August in 1890, into five series representing, respectively, the

Cruz; Presidio, near Mazatlan; Belize, British Honduras; Dueñas, Cahabon, Retalhuleu, sources Rio de la Pasion, and Coban, Guatemala; Cozumel I., Yucatan; San Pedro, Honduras; Irazú distr., Costa Rica; Lion Hill and Panama, Panama R. R.).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 331 (Lion Hill, Panama R. R.); viii, 1865, 177 (David, Chiriqui); viii, 1866, 289 (vic. New York City).—KENNERLY, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 31 (San Antonio, Texas).—VERRILL, Proc. Essex Inst., iii, 1862, 157 (s. Maine, rare).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 353 (Lion Hill, Panama R. R.); 1870, 837 (San Pedro, Honduras).—DRESSER, Ibis, 1865, 493 (San Antonio, Texas, breeding).—MCILWRAITH, Proc. Essex Inst., v, 1866, 90 (Hamilton, Ontario, casual).—GUNDLACH, Repert. Fisico-Nat. Cuba, i, 1866, 286; Journ. für Orn., 1874, 127 (Cuba); Orn. Cub., 1893, 114.—SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (David, Chiriqui).—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas, June, Aug.).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 553 (Vera Cruz).—TRIPPE, Proc. Bost. Soc. N. H., 1872, 239 (Iowa, breeding).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 138 days (Fort Hays, w. Kansas, breeding), 150 (Denver, Colorado, summer), 178 (Kansas; Colorado); Proc. Bost. Soc. N. H., xvii, 1874, 60 (second crossing Heart R., e. Montana, July).—COUES, Check List, 1873, no. 215; 2d ed., 1882, no. 324; Birds N. W., 1874, 192; Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 604 (Pembina, North Dakota, 1 spec., June 6).—RIDGWAY, Bull. Essex Inst., v, 1873, 184 (Colorado); Nom. N. Am. Birds, 1881, no. 270; Orn. Illinois, i, 1889, 320.—SNOW, Birds Kansas, 1873, 8.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 190, pl. 34, figs. 4, 5, 6.—MAYNARD, Amer. Sportsman, iv, 1874, 155 (Ipswich, Massachusetts, casual; West Meriden, Connecticut, breeding); Birds E. N. Am., 1881, 144.—GENTRY, Proc. Ac. Nat. Sci. Phila., 1874, 99 (habits).—MEEHAN, Proc. Ac. Nat. Sci. Phila., 1874, 84 (habits).—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 442 (s. New England, breeding).—BREWSTER, Ann. Lyc. N. Y., xi, 1875, 141 (Ritchie Co., West Virginia; habits; song).—MERRIAM, Trans. Conn. Acad., iv, 1877, 46 (Connecticut, breeding).—MCCAULEY, Bull. U. S. Geol. and Geog. Surv. Terr., iii, 1877, 668 (n. Texas and Indian Terr., breeding).—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 25 (Hidalgo, s. Texas, breeding).—RATHBUN, Rev. List Birds, Centr. N. Y., 1879, 21 (summer resid.).—MCCHESNEY, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 79 (Fort Sisseton, South Dakota, breeding).—GIBBS, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 488 (Michigan, breeding s. of 43°).—BROWN (N. C.), Bull. Nutt. Orn. Club, ii, 1882, 40 (Boerne, Kendall Co., w. Texas, 1 spec., Apr.).—ZELEDON, Cat. Aves de Costa Rica, 1882, 10; An. Mus. Nac. Costa Rica, i, 1887, 12 (Alajuela; Cartago).—NUTTING, Proc. U. S. Nat. Mus., vi, 1883, 392 (Ometepe, Nicaragua).—KNOWLTON, Auk, i, 1884, 390 (Middlebury, Vermont, 2 specs., June 1, 1883).—BICKNELL, Auk, ii, 1885, 251 (Riverdale, s. e. New York; song).—AGERSBORG, Auk, ii, 1885, 282 (s. e. South Dakota, breeding).—CORY, Auk, iii, 1886, 218; Birds W. I., 1889, 105; Cat. W. I. Birds, 1892, 110 (Cuba).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 506.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 150 (Huexotitla and Chietla, Puebla, Dec.).—BUTLER, Bull. Brooklyn Soc. N. H., no. 2, 1886, 29 (Franklin Co., Indiana, common summer resid.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 464.—HANCOCK, Bull. Ridgw. Orn. Club, no. 2, 1887, 18 (Corpus Christi, Texas, breeding).—BRODIE, Auk, v, 1888, 211 (Toronto, Ontario, May 13).—KEYES and WILLIAMS, Trans. Davenport Ac. Sci., v, 1888 (Des Moines, Iowa, breeding).—COOKE, Birds Migr. Miss. Val., 1888, 168–170 (localities, dates, etc.); Birds Colorado, 1897, 94 (Denver, 1 spec.); Bull. Col. Agric. Coll., no. 44, 1898, 164 (Beaver Creek Valley, Fre-

- mont Co., 3 specs., May, 1875).—CHERRIE, Auk, vii, 1890, 334 (San José, Costa Rica, July 31 to Mar. 2); ix, 1892, 250 (do.); Expl. Zool. Costa Rica, 1893, 30 (Buenos Aires, s. w. Costa Rica).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 580 (Pembina, North Dakota).—SMITH (R. W.), Journ. Cinc. Soc. N. H., 1891, 119 (Warren Co., s. w. Ohio, breeding).—GOSS, Birds Kansas, 1891, 402 (whole State, breeding).—ATTWATER, Auk, ix, 1892, 280 (San Antonio, Texas, breeding).—HATCH, Birds Minnesota, 1892, 280 (summer resid.).—MCLLWRAITH, Birds Ontario, 1892, 285 (London, Dunnville, and Hamilton, breeding).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (Rio Escondido, Nicaragua, Aug. 20 to Feb. 23).—SINGLEY, Rep. Geol. Surv. Texas, 1894, 372 (Hidalgo; Corpus Christi).—WAYNE, Auk, ii, 1895, 365 (Wacissa R., n. w. Florida, breeding).—ULREY and WALLACE, Proc. Indiana Acad. Sci. 1895, 153 (Wabash, n. Indiana, common summer resid.).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 479, pl. 7, figs. 3-5 (eggs).—NEHRLING, Our Native Birds, etc., ii, 1896, 260, pl. 30, fig. 4.—OBERHOLSER, Bull. Ohio Agric. Exp. Sta., tech. ser., i, no. 4, 1896, 303 (Wayne Co., n. e. Ohio, summer resid.).—BUTLER, Birds Indiana, 1897, 898 (whole State).—KNIGHT, Bull. Univ. Maine, no. 3, 1897, 88 (Androscoggin, Knox, and Washington counties, Maine, accidental).—POSSON, Auk, xvi, 1899, 195 (Orleans Co., New York, several records).—SAMUEL, Auk, xvii, 1900, 391, 392 (Toronto, Ontario, breeding).—BEYER, Proc. Louis. Soc. Nat. for 1897-1899 (1900), 105 (Louisiana, breeding).
- [*Icterus*] *spurius* COUES, Key N. Am. Birds, 1872, 158.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.—CORY, List Birds W. I., 1885, 13.
- [*Icterus*] *spurius* NELSON, Bull. Essex Inst., viii, 1876, 111 (n. e. Illinois, common summer resid.).—COUES, Key N. Am. Birds, 2d ed., 1884, 407.—RIMMWAY, Man. N. Am. Birds, 1887, 376.
- [*Yphantis*] *spurius* BONAPARTE, Consp. Av., i, 1850, 432.
- X [*anthornus*] *spurius* CABANIS, Mus. Hein., 17 Aug., 1851, 184.
- Xanthornus spurius* CABANIS, Journ. für Orn., 1861, 8 (Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (San José, Costa Rica).—FRANZIS, Journ. für Orn., 1869, 303 (Costa Rica).
- Pendulinus spurius* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 61 (monogr.).



- P[endulinus] solitarius* VIEILLOT, Enc. Méth., ii, 1823, 705 (based on *Bastard Oriole* Catesby, Nat. Hist. Carolina).
- Pendulinus viridis* VIEILLOT, Nouv. Dict. d'Hist. Nat., v, 1816, 301.
- Pendulinus nigricollis* VIEILLOT, Nouv. Dict. d'Hist. Nat., v, 1816, 318.
- Oriolus mutatus* WILSON, Am. Orn., i, 1808, 64, pl. 4, figs. 1-4.
- Xanthornus affinis* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., v, 1852, 113 (Rio Grande, Texas; coll. G. N. Lawrence).—WOODHOUSE, Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 79 (Texas).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1853, 332 (Rio Grande).—KENNERLY, Rep. Pacific R. R. Surv., iv, pt. vi, 1857, 10 (75 m. w. of Albuquerque, New Mexico).—HEERMANN, Rep. Pacific R. R. Surv., x, no. 1, 1859, 17 (San Antonio, Texas, breeding).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 140 (Rio Atrato, Colombia).
- Icterus affinis* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1859, 20 (Guatemala).—SALVIN and SCLATER, Ibis, 1860, 34 (Dueñas and Coban, Guatemala, July, numerous!).—SCLATER, Cat. Am. Birds, 1862, 130 (Jalapa); Proc. Zool. Soc. Lond., 1864, 175 (Valley of Mexico).
- Bananivorus affinis* SCLATER, Proc. Zool. Soc. Lond., 1856, 301 (Cordova, Vera Cruz); 1859, 365 (Jalapa, Vera Cruz).
- Pendulinus affinis* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 61 (monogr.).
- [*Icterus spurius*] Var. *affinis* COUES, Key N. Am. Birds, 1872, 158.
- Icterus spurius* . . . var. *affinis* COUES, Check List, 1873, no. 215a.
- Icterus spurius* var. *affinis* LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 24 (Chihuitan, Santa Efigenia, and Tehuantepec City, Oaxaca); Mem. Bost. Soc. N. H., ii, 1874, 279 (Mazatlan; plains of Colima).—MERRILL, Proc. U. S. Nat. Mus., i, 1879, 135 (Fort Brown, Texas, breeding).
- Icterus spurius affinis* COUES and SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 397 (Lometa, Texas, breeding).—COUES, Check List, 2d ed., 1882, no. 325.—NEHRING, Bull. Nutt. Orn. Club, vii, 1882, 167 (s. e. Texas, breeding; descr. nests).
- [*Icterus spurius*] b. *affinis* COUES, Birds N. W., 1874, 193 (in synonymy).
- [*Icterus*] s[*purius*] *affinis* COUES, Key N. Am. Birds, 2d ed., 1884, 408.

## ICTERUS BONANA (Linnæus).

## MARTINIQUE ORIOLE.

*Adults (sexes alike).*—Head, neck, chest, and upper breast rich very dark chestnut or bay; back, scapulars, wings (except lesser and middle coverts), and tail black; lesser and middle wing-coverts, lower rump, and under parts of body (posterior to upper breast) deep orange-rufous or rufous-tawny, deepest on lower breast, where sometimes almost chestnut; upper part of rump, thighs, and under wing-coverts orange-ochraceous or dull orange-yellow; upper and under tail-coverts orange-rufous or rufous-tawny, the longer feathers tipped with black; bill black, the basal portion of mandible pale bluish gray; legs and feet grayish dusky (bluish gray or grayish blue in life?).

*Young.*—Similar to adults, but colors duller and plumage of looser texture.

*Adult male.*—Length (skin), 182.9; wing, 86.9; tail, 83.8; culmen, from base, 8.1; tarsus, 22.9; middle toe, 15.5.<sup>1</sup>

*Adult female.*—Length (skin), 193; wing, 77;<sup>2</sup> tail, 84.6; culmen,

<sup>1</sup> One specimen.<sup>2</sup> Unreliable measurement (primaries molting).

from base (two specimens), 21.8-22.1; depth of bill at base, 8.9; tarsus (two specimens), 21.8-23.1 (22.4); middle toe, 15.7.<sup>1</sup>

Island of Martinique, Lesser Antilles; Island of Guadeloupe??

[*Oriolus*] *bonana* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 162 (based on *Icterus minor, nidum suspendens*, Sloane, Jam., ii, 299, pl. 257, fig. 1).—GMELIN, Syst. Nat., i, 1788, 390.—LATHAM, Index Orn., i, 1790, 181.

*Icterus bonana* DAUDIN, Traité d'Orn., ii, 1800, 332.—TAYLOR, Ibis, 1864, 167 (Martinique).—LAWRENCE, Proc. U. S. Nat. Mus., i, 1879, 355 (Martinique; habits).—CORY, Auk, iii, 1886, 215 (synonymy; diagnosis); iv, 1887, 96 (Martinique); Birds W. I., 1889, 102; Cat. W. I. Birds, 1892, 15, 110, 133 (Martinique).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 368 (Martinique).

[*Icterus*] *bonana* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.—CORY, List Birds W. I., 1885, 13.

*Icterus bonana* SCLATER, Cat. Am. Birds, 1862, 131 ("Antilles").

*Pendulmus banana* VIEILLLOT, Nouv. Dict. d'Hist. Nat., v, 1816, 316.

[*Pendulinus*] *bonana* BONAPARTE, Consp. Av., i, 1850, 432.

*Pendulinus bonana* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 54 (monogr.).

*Pearocolius bonana* WAGLER, Syst. Av., 1827, *Pearocolius*, sp. 19.

X[*anthornus*] *bonana* CABANIS, Mus. Hein, i, 1851, 183 (Martinique).

(f) *Pendulinus rufigaster* VIEILLLOT, Nouv. Dict. d'Hist. Nat., v, 1816, 321 ("Amérique méridionale" ?).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 55 (monogr.; Guadeloupe).

(f) *P[endulinus] rufigaster* VIEILLLOT, Enc. Méth., ii., 1823, 708.

(f) [*Bananivorus*] *rufigaster* BONAPARTE, Compt. Rend., 1823, 834 (Guadeloupe)

ICTERUS MELANOCEPHALUS MELANOCEPHALUS (Wagler).

#### BLACK-HEADED ORIOLE.

*Adult male*.—Head, upper part of neck, median portion of upper chest, wings (except lesser and part of middle coverts), and tail black, the tertials usually more or less edged with whitish or pale brownish gray; lower hindneck, back, scapulars, rump, and upper tail-coverts

*Adult female*.—Similar to adult male, but smaller and slightly duller in color, the back, etc., inclining more decidedly to olive-green; length (skins), 198.1–214.6 (204); wing, 89.4–95.8 (91.9); tail, 88.9–99.1 (92.2); culmen, from base, 22.4–23.6 (23.1); depth of bill at base, 10.2–10.4 (10.4); tarsus, 25.4–26.9 (26.2); middle toe, 17.5–18 (17.8).<sup>1</sup>

*Immature (second year?)*.—Similar to adult female, but still more decidedly olive-green above; wings and tail dusky brownish gray, the former with pale olive-grayish, the latter with yellowish olive-green edgings; yellow of under parts shaded laterally with olive-greenish.

*Young*.—No black on head, neck, or chest, the color being yellowish olive-green above, pale lemon yellow beneath; otherwise as in the immature stage described above.

Southern portion of the Mexican plateau, in States of San Luis Potosi (Valles; Toncanhuitz), Vera Cruz (Jalapa; Mirador; Orizaba; Jico; Papantla), Puebla (Metlaltoyuca), Oaxaca (Pluma; Mount Zempoaltepec), Chiapas (Guichicovi), Mexico (Valley of Mexico), and Jalisco (San Sebastian).

*Ps[arocolius] melanocephalus* WAGLER, Isis, 1829, 756 (Mexico).

*Icterus melanocephalus* HAHN, in Kuster's Vög. aus Asien, Lief vi, 2, pl. 3.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1848, 90 (Jalapa, Vera Cruz); 1867, 53 (monogr.; Jalapa, Mirador, and Orizaba, Vera Cruz); Illustr. Birds Cal., Tex., etc., 1854, pl. 21 (not description, which = *I. m. audubonii*).—SCLATER, Proc. Zool. Soc. Lond., 1856, 301 (Mexico); 1858, 97, part (tierra caliente, Vera Cruz; crit.); 1859, 365 (Jalapa); Cat. Am. Birds, 1862, 132 (s. Mexico); Ibis, 1883, 365 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 375, part.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 543; Cat. N. Am. Birds, 1859, no. 410.—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 553 (temperate region, Vera Cruz).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 186.—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 23 (Guichicovi, Chiapas, Sept.).—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 236.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 468, part.—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 30 (Jalapa; song).—LANTZ, Trans. Kans. Ac. Sci. for 1896–97 (1899), 222 (S. Tomas, Guatemala).

[*Icterus*] *melanocephalus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

[*Icterus*] *melanocephalus* CABANIS, Mus. Hein., i, 1851, 185 (Jalapa).—RIDGWAY, Man. N. Am. Birds, 1887, 374.

[*Xanthornus*] *melanocephalus* BONAPARTE, Consp. Av., i, 1850, 434, part.

[*Icterus melanocephalus*] var. *melanocephalus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 182.

[*Icterus melanocephalus*] b. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 375, in list of specimens (Jalapa and Orizaba, Vera Cruz; Oaxaca).

*Icterus graduacauda* LESSON, Rev. Zool., 1839, 105 (Mexico).

[*Icterus*] *graduacauda* GRAY, Gen. Birds, ii, 1844, 343.

(?) *Icterus audubonii* (not of Giraud) SCLATER, Cat. Am. Birds, 1862, 132 (Jalapa and Orizaba, Vera Cruz).

*Icterus audubonii* SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 553 (temperate region, Vera Cruz).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 2d ed., 1895, no. 503, part (Oaxaca).

*Icterus auduboni* FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 150 (Jalapa, Aug., Sept.).

<sup>1</sup> Three specimens.

(?) *Icterus virens* (not of Vigors, 1828) DUBOIS, Bull. Ac. Roy. Belg., sér. 2, xl, Dec., 1875, 798 (Mexico; coll. Brussels Mus.).

ICTERUS MELANOCEPHALUS AUDUBONII (Giraud).

AUDUBON'S ORIOLE.

Similar to *I. m. melanocephalus*, but much larger and with broad white edgings to innermost secondaries, the greater wing-coverts also usually broadly edged with white near tips.

*Adult male*.—Length (skins), 214.6–233.7 (227.6); wing, 96.3–102.4 (100.6); tail, 102.6–106.2 (104.6); culmen, from base 25.7–28.2 (26.4); depth of bill at base, 10.7–11.4 (10.9); tarsus, 26.9–27.9 (27.2); middle toe, 17.5–19.6 (18.5).<sup>1</sup>

*Adult female*.—Length (skins), 203.2–236.2 (221.5); wing, 94–98 (96); tail, 99.6–105.9 (102.9); culmen, from base, 21.8–26.4 (24.6); depth of bill at base, 9.9–10.9 (10.4), tarsus, 24.9–27.4 (26.9); middle toe, 17.5–19.3 (18.5).<sup>1</sup>

Northeastern Mexico, in States of Nuevo Leon (Linares; Rodriguez; Monterey), Tamaulipas (Matamoras; Charco Escondido; Victoria), San Luis Potosi (Hacienda Angostura), and Mexico (Valley of Mexico), and southern Texas (Ringgold Barracks; Rio Grande City; Hidalgo; Brownsville; Lometa, etc., occasionally to San Antonio).

*Icterus audubonii* GIRAUD, Sixteen Species Texan Birds, 1841, 3 (Texas; type in coll. U. S. Nat. Mus.).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 542 (Matamoras, Tamaulipas; Ringgold Barracks, Texas); Cat. N. Am. Birds, 1859, no. 409; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19 (Charco Escondido and Matamoras, Tamaulipas; Ringgold Barracks, Texas).—SCLATER, Proc. Zool. Soc. Lond., 1864, 175 (Valley of Mexico); Ibis, 1883, 366 (monogr.).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 53 (monogr.; Tamaulipas and Nuevo Leon, n. e. Mexico; Texas; "New Mexico").—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 184, 233. AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no.

[*Icterus melanocephalus*] a. Subsp. *auduboni* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 375, in list of specimens (Matamoras).

[*Xanthornus*] *melanocephalus* (not *Psarocolius melanocephalus* Wagler) BONAPARTE, Consp. Av., i, 1850, 434, part.

*Icterus melanocephalus* BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 332 (Texas).—CASSIN, Illustr. Birds Cal., Tex., etc., 1854, 137 (not pl. 21, =true *I. melanocephalus*).—SCLATER, Proc. Zool. Soc. Lond., 1858, 97, part (Orizaba, Very Cruz; crit.).

### ICTERUS PECTORALIS PECTORALIS (Wagler).

#### SPOTTED-BREADED ORIOLE.

*Adults (sexes alike).*—Lores, triangular postocular spot, anterior portion of malar region, chin, throat, and median portion of chest deep black; rest of head and neck rich cadmium orange; back and scapulars uniform deep black; wings (except lesser and middle coverts) and tail black, the former relieved by broad white edgings to tertials (producing a conspicuous wedge-shaped stripe in closed wing) and, usually, by more or less of white at base of second to seventh primaries; lateral rectrices more or less broadly margined terminally with dull grayish; lesser and middle wing-coverts, whole rump, upper tail-coverts, and under parts (except chin, throat, and median portion of chest) rich orange-yellow or orange, the sides of breast and chest (sometimes median portion of the former also) marked with triangular spots of black; bill black, with basal portion of mandible bluish gray (pale grayish blue in life); legs and feet dusky grayish (bluish gray or grayish blue in life?); length (skins), 199.7–238.8 (217.9); wing, 100.3–111.3 (104.6); tail, 96.5–109.2 (102.1); culmen, from base, 21.3–24.4 (22.9); depth of bill at base, 9.1–9.7 (9.4); tarsus, 25.7–28.2 (26.9); middle toe, 18.3–20.3 (18.5).<sup>1</sup>

Southern Mexico, in States of Oaxaca (Putla, Juchitan, Santa Efigenia, etc.) and Chiapas (Tonala), Guatemala (Vera Paz, Retalhuleu, Escuintla, Savana Grande, San Gerónimo, etc.) and Salvador (Acajutla).

*Ps[arocolius] pectoralis* WAGLER, Isis, 1829, 755 (Mexico).

[*Icterus*] *pectoralis* BONAPARTE, Consp. Av., i, 1850, 435.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part (Mexico; Guatemala).—DES MURS, Icon. Orn., 1845–46, pl. 10 (Mexico).

*Icterus pectoralis* SCLATER, Proc. Zool. Soc. Lond., 1857, 205 (Mexico); Ibis, 1883, 372, part (monogr.); Cat. Birds Brit. Mus., xi, 1886, 385, part (Putla, Oaxaca; Tonala, Chiapas; Savana Grande, San Gerónimo, and Retalhuleu, Guatemala).—SCLATER and SALVIN, Ibis, 1859, 19 (Vera Paz, Guatemala).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 48, part (monogr.; Coban, Guatemala).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 23 (Juchitan and Santa Efigenia, Oaxaca).—SALVIN, Cat. Strickland Coll., 1882, 264 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 474, part (Mexican references and localities; Escuintla, etc., Guatemala; Acajutla, Salvador).—LANTZ, Trans. Kansas Ac. Sci. for 1896–97 (1899), 222 (Palin, Guatemala).

*Icterus guttulatus* LAFRESNAYE, Mag. de Zool., 2<sup>e</sup> sér., an. 1844, Ois., pp. 1–4, pl. 52 (Mexico?).

<sup>1</sup> Seven specimens, of which only one is sexed.

## ICTERUS PECTORALIS ESPINACHI Ridgway.

## ESPINACHI'S ORIOLE.

Similar to *I. p. pectoralis*, but decidedly smaller (except feet).

*Adult male*.—Length (skins), 205.7–213.4 (210.8); wing, 95.8–101.1 (99.1); tail, 89.4–97 (94.2); culmen, from base, 21.6–23.4 (22.1); depth of bill at base, 9.1–10.2 (9.7); tarsus, 27.4–27.9 (27.4); middle toe, 19.3–19.5 (18.3).<sup>1</sup>

*Adult female*.—Wing, 91.4; tarsus, 27.9; middle toe, 17.3.<sup>2</sup>

Nicaragua (Chontales?; Managua; San Juan) and western Costa Rica (La Palma, Gulf of Nicoya; Liberia).

*Icterus pectoralis* (not *Psarocolius pectoralis* Wagler) SCLATER, Cat. Am. Birds, 1862, 134, part (Nicaragua); (?) Ibis, 1873, 373 (Chontales, Nicaragua); Ibis, 1883, 372, part (monogr.); (?) Cat. Birds Brit. Mus., xi, 1886, 385, part (Chontales).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 48, part (Nicaragua; Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (Costa Rica).—FRANTZTUS, Journ. für Orn., 1869, 302 (Costa Rica).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 474, part (Chontales and San Juan, Nicaragua; La Palma, w. Costa Rica).—UNDERWOOD, Ibis, 1896, 437 (Volcan de Miravalles, Costa Rica).

[*Icterus*] *pectoralis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part (Costa Rica).

*Icterus gutturalis* (not of Lafresnaye) CABANIS, Journ. für Orn., 1861, 9 (Costa Rica).

*Icterus pectoralis espinachi* "Nutting (MS.)" RIDGWAY, Proc. U. S. Nat. Mus., v, sig. 25, Sept. 5, 1882, 392 (La Palma, Gulf of Nicoya, Costa Rica; coll. U. S. Nat. Mus.).—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 392 (song).—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 112 (Liberia, Costa Rica).

*Icterus espinachi* ZELEDON, Cat. Aves de Costa Rica, 1882, 9.

## ICTERUS GULARIS GULARIS (Wagler).

## LICHTENSTEIN'S ORIOLE.

*Adults (series alb.)*.—Lores, anterior portion of maxillary region, chin,



yellowish olive; lesser wing-coverts dusky, broadly tipped or margined with saffron yellowish; middle coverts dusky at base, broadly tipped with white or yellow; rest of wings dark grayish brown with paler edgings, these white, or nearly so, on greater coverts; tail yellowish olive.

*Young (first plumage).*—Head, neck, and under parts (including throat, etc.) yellow, the color duller on pileum and hindneck; back and scapulars olive; rump and upper tail-coverts dull yellow (gallstone or dull saffron), like pileum and hindneck; wings and tail as in the immature plumage, described above, but greater coverts broadly tipped (on outer webs) with dull yellowish white, secondaries broadly edged with white, primaries more broadly edged with pale gray (passing into white terminally) and with a white patch at base.

*Adult male.*—Length (skins), 228.6–279.4 (247.9); wing, 116.1–142.2 (125); tail, 101.1–117.3 (107.4); culmen, from base, 26.2–30.2 (27.9); depth of bill at base, 12.2–14.5 (13.2); tarsus, 29.7–32.5 (31.2); middle toe, 20.3–23.9 (22.4).<sup>1</sup>

*Adult female.*—Length (skins), 218.4–251.5 (238.8); wing, 108–126.2 (113.8); tail, 91.7–114.8 (101.1); culmen, from base, 24.6–27.7 (26.4); depth of bill at base, 11.9–13.7 (13); tarsus, 28.5–30.7 (30); middle toe, 17.8–22.4 (21.1).<sup>2</sup>

Southwestern Mexico, in States of Oaxaca (Putla, Barrio, Chihuitan, Juchitan, Santa Efigenia, Tehuantepec, Huilotepec, Juchitan, Chimalapa, etc.) and Chiapas (Tonala, Huehuetan), and southward through Guatemala (Vera Paz, San Gerónimo, Retalhuleu, Savana Grande, San Pedro Martir, Zacapa, etc.), Salvador (Acajutla), and Honduras (Comayagua), to Nicaragua (San Juan); British Honduras (Corosal)?.

*Ps[arocolius] gularis* WAGLER, Isis, 1829, 754 (Tehuantepec, Oaxaca; ex Lichtenstein, manuscript).

*Icterus gularis* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 1 ("Mexico"); Journ. für Orn., 1863, 56.—DES MURS, Icon. Orn., 1845–46, pl. 9.—SCLATER, Proc. Zool. Soc. Lond., 1858, 358 (Comayagua, Honduras); Ibis, 1883, 371, part (s. Mexico, Yucatan, British Honduras, Guatemala); Cat. Birds Brit. Mus., xi, 1886, 384, part (Tonala, Chiapas; Putla and Tehuantepec, Oaxaca; Savana Grande and San Pedro Martir, Guatemala; Corosal, British Honduras?).—SCLATER and SALVIN, Ibis, 1859, 19 (Vera Paz, Guatemala; Comayagua, Honduras).—SALVIN, Ibis, 1859, 468 (Guatemala); 1860, 195 (San Gerónimo, Guatemala).—(?) TAYLOR, Ibis, 1861, 111 (Honduras).—OWEN, Ibis, 1861, 62, pl. 2, fig. 5 (San Gerónimo, Guatemala; descr. and colored fig. of eggs).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 49, part (San Gerónimo, Guatemala; San Salvador; San Juan, Nicaragua).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 23 (Barrio, Chihuitan, Juchitan, and Santa Efigenia, Oaxaca).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 475, part (Putla, Barrio, Chihuitan, Juchitan, and Santa Efigenia, Oaxaca; Tonala, Chiapas; Corosal, British Honduras?; Vera Paz, San Gerónimo, Retalhuleu, Savana Grande, San Pedro Martir, and Zacapa, Guatemala; Acahutla, Salvador; Comayagua, Honduras; Nicaragua).

<sup>1</sup>Ten specimens.

<sup>2</sup>Six specimens.

*Ict[erus] gularis* BONAPARTE, *Consp. Av.*, i, 1850, 435 ("Mexico").

[*Icterus*] *gularis* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 36, part.

*Icterus gularis gularis* RIDGWAY, *Proc. Wash. Ac. Sci.*, iii, Apr. 15, 1901, 152, in text.

(?) *Icterus mentalis* LESSON, *Cent. Zool.*, 1830, 111, pl. 41 (Mexico; ex "*Cucicus mentalis* Wagler, *Ibis*").—(?) LAFRESNAYE, *Rev. Zool.*, 1842, 136.—SCLATER, *Cat. Am. Birds*, 1862, 134 (San Gerónimo, Guatemala).

The following references are doubtful, and may belong either to this form or to *I. g. tamaulipensis*:

*Icterus gularis* CASSIN, *Proc. Ac. Nat. Sci. Phila.*, 1848, 90 (Mexico).—SCLATER, *Proc. Zool. Soc. Lond.*, 1857, 205 (Mexico).

#### ICTERUS GULARIS TAMAULIPENSIS Ridgway.

##### ALTA MIRA ORIOLE.

Similar to *I. g. gularis*, but decidedly smaller and the coloration more intense, the orange-yellow more decidedly orange (usually rich cadmium orange); black at anterior extremity of malar region, broader; bill shorter and deeper through base.

*Adult male*.—Length (skins), 219.7–242.6 (232.7); wing, 108.2–117.9 (114.3); tail, 97.3–111 (104.1); culmen, from base, 24.9–26.9 (25.7); depth of bill at base, 13–14.7 (13.7); tarsus, 29.5–31 (30); middle toe, 19.3–21.8 (20.1).<sup>1</sup>

*Adult female*.—Length (skins), 218.4–238.8 (226.3); wing, 105.2–110.7 (108.2); tail, 95–103.1 (99.8); culmen, from base, 23.6–25.9 (24.6); depth of bill at base, 12.7–14 (13.2); tarsus, 28.7–30 (29.5); middle toe, 19.6–22.4 (19.8).<sup>2</sup>

Eastern Mexico, in States of Vera Cruz (Otatitlan, Papantla, Cate-maco, San Andreas Tuxtla, etc.), Puebla (Metlatoyuca, February) San Luis Potosi (Valles, etc.), and Tamaulipas (Alta Mira, Hidalgo



[*Icterus*] *gularis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part.

*Icterus gularis yucatanensis* (not of Berlepsch) BENDIRE, Auk, x, 1893, 366 ("Avery's Island, Louisiana").—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xi, 1894, 51; xii, 1895, 169.

(?) *Icterus gularis flammeus* [*nomen nudum*!] LANTZ, Trans. Kansas Acad. Sci. for 1896-97 (1899), 222 (Rinconada, Puebla).

*Icterus gularis tamaulipensis* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 152 (Alta Mira, Tamaulipas; coll. U. S. Nat. Mus.).

### ICTERUS GULARIS YUCATANENSIS Berlepsch.

#### YUCATAN ORIOLE.

Similar to *I. g. tamaulipensis*, but still smaller, with coloration still more intense (adults rich cadmium orange, the head bright orange-chrome), and maxilla much narrower (in vertical width).

*Adult male*.—Length (skins), 204.5-243.8 (225.3); wing, 106.9-117.3 (113); tail, 97.8-106.7 (103.1); culmen, from base, 22.9-25.4 (24.1); depth of bill at base, 11.2-13.2 (12.7); tarsus, 25.9-30 (28.7); middle toe, 18-20.3 (19.3).<sup>1</sup>

*Adult female*.—Length (skins), 215.9-226.1 (221); wing, 99.3-106.7 (104.1); tail, 96.5-103.1 (99.3); culmen, from base, 22.9-23.4 (23.1); tarsus, 26.4-30.2 (28.5); middle toe, 17.5-19.8 (18.8).<sup>2</sup>

Yucatan (Chichen-Itza; Temax; Calotmul; Tekanto; Shkolak), including island of Cozumel.

*Icterus gularis* (not *Psurocolius gularis* Wagler) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 384, part (Cozumel I., Yucatan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 475, part (Yucatan; Cozumel I.)—STONE, Proc. Ac. Nat. Sci. Phila., 1890, 208 (int. Yucatan).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 281 (Chichen-Itza, Yucatan).

[*Icterus*] *gularis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part.

*Icterus gularis yucatanensis* BERLEPSCH, Auk, v, Oct., 1888, 454 (Yucatan; coll. Count von Berlepsch).—RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 152, in text.

### ICTERUS CUCULLATUS CUCULLATUS Swainson.

#### HOODED ORIOLE.

*Adult male in summer*.—Lores, anterior portion of forehead, orbital region, anterior half of auricular region, malar region, chin, throat, and upper chest uniform black, with a rounded posterior outline on the chest; back, scapulars, and lesser wing-coverts uniform black; middle wing-coverts white, producing a very broad white band; rest of wings black, the outer webs of greater coverts tipped with white, the remiges edged with grayish white; tail black, the lateral rectrices more or less broadly margined at tips with pale grayish; rest of plumage varying from cadmium yellow to cadmium orange, the color most intense on head, neck, and chest; bill black, with basal portion of mandible bluish gray (pale grayish blue or bluish white in life); legs and feet grayish dusky (bluish gray in life?).

<sup>1</sup> Twelve specimens.

<sup>2</sup> Three specimens.

*Adult male in winter*.—Similar to the summer plumage, but the orange or orange-yellow duller, especially on upper parts, where more or less obscured by a tinge or wash of olivaceous; scapulars and interscapulars margined terminally with light olive or olive-grayish; tertials more broadly margined with white.

*Adult female*. Pileum, hindneck, rump, upper tail-coverts, and tail yellowish olive, the occiput and nape tinged with dull brownish gray; back and scapulars dull brownish gray; lesser wing-coverts brownish gray, more dusky centrally; rest of wings dusky, with pale brownish gray edgings, the middle coverts broadly tipped with white, and pale edgings to greater coverts becoming white terminally; beneath dull ochre-yellow, paler on abdomen, strongly washed with grayish on sides and flanks.

*Immature male (second year?)*.—Similar to adult female, but lores, anterior portion of malar region, chin, and throat black.

*Adult male*.—Length (skins), 180.3–193 (187.2); wing, 83.3–86.1 (84.8); tail, 89.7–98 (94); culmen, from base, 19.6–20.8 (20.1); depth of bill at base, 7.6–8.1 (7.9); tarsus, 21.8–23.6 (22.6); middle toe, 15.5–16.8 (16).<sup>1</sup>

*Adult female*.—Length (skins), 185.4–194.3 (189.7); wing, 80.3–81.5 (81); tail, 85.9–90.2 (87.4); culmen, from base, 19.8; depth of bill at base, 7.4–7.9 (7.6); tarsus, 22.4–23.1 (22.6); middle toe, 15.2–15.7 (15.5).<sup>2</sup>

Eastern portion of Mexican plateau and Atlantic lowlands, from States of Nuevo Leon (Monterey, near Guajuco, Linares, etc.) and southern Tamaulipas (La Cima, Alta Mira, etc.), southwestward through States of San Luis Potosi (Valles), Mexico (Temascaltepec, Amecameca, etc.), Guanajuato (Moro Leon), Morelos (Titela del Vol-

- [*Icterus*] *cucullatus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part.—(?) CORY, Dist. Birds W. I., 1885, 13.
- [*Icterus cucullatus*] var. *cucullatus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 183, part.
- [*Icterus*] *cucullatus* COUES, Key N. Am. Birds, 2d ed., 1884, 409, part.—RIDGWAY Man. N. Am. Birds, 1887, 375, part.
- [*Pendulinus*] *cucullatus* BONAPARTE, Consp. Av., i, 1850, 433.
- Pendulinus cucullatus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 60, part (monogr.).
- Icterus cucullatus cucullatus* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 152, in text.
- (?) *Hyphantes costotoll* (not *Psarocolius costotoll* Wagler?) GUNDLACH, Journ. für Orn., 1856, 11 (Cuba); 1861, 413 (do.).
- (?) *Yphantes bullockii* (not *Xanthornus bullockii* Swainson) BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).
- [*Icterus cucullatus*] a. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 376, in list of specimens (Mexico).

### ICTERUS CUCULLATUS SENNETTI Ridgway.

#### SENNETT'S ORIOLE.

Similar to *I. c. cucullatus*, but lighter in color; adult males less decidedly orange, the color of pileum, chest, etc., deep cadmium yellow, never cadmium orange; adult females much lighter in color, the yellow of under parts dull or pale gamboge instead of saffron or ochreous, the back and scapulars lighter grayish, and light olive-greenish of pileum, rump, etc., clearer; wing and tail averaging decidedly shorter.

*Adult male*.—Length (skins), 188–199.7 (193); wing, 80.5–85.3 (83.3); tail, 87.9–99.1 (91.7); culmen, from base, 19.8–20.6 (20.3); depth of bill at base, 7.9–8.4 (8.1); tarsus 21.8–23.1 (22.6); middle toe, 15.2–15.7 (15.5).<sup>1</sup>

*Adult female*.—Length (skins), 177.8–190.5 (184.7); wing, 78–81.3 (79.5); tail, 83.8–88.4 (86.4); culmen, from base, 18.3–19.6 (19.1); depth of bill at base, 7.6–8.1 (7.9); tarsus, 20.8–22.6 (22.1); middle toe, 15.2–15.7 (15.5).<sup>2</sup>

Lower Rio Grande Valley, in Texas and Tamaulipas; south in winter to Morelos (Cuernavaca, Yautepec, etc., January).

*Icterus cucullatus* (not of Swainson) LAWRENCE, Ann. Lyc. N. Y., v, 1852, 116 (Texas).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 332 (Rio Grande, Texas); Rep. Pacific R. R. Surv., ix, 1858, 546 (Charco Escondido, Tamaulipas); Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19 (do.); Cat. N. Am. Birds, 1859, no. 413.—CASSIN, Illustr. Birds Tex., Cal., etc., 1854, 42, pl. 8 (Texas).—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas).—COUES, Check List, 1873, no. 218; 2d ed., 1882, no. 328.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 193, part, pl. 35, fig. 6.—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 25 (Brownsville and Hidalgo, Texas; habits, etc.); v, 1879, 398 (Lometa, Texas; habits; descr. nest and eggs; measurements).—MERRILL, Proc. U. S. Nat. Mus., i, 1879, 134 (Fort

<sup>1</sup> Seven specimens.

<sup>2</sup> Five specimens.

Brown, Texas; descr. nest and eggs).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 269, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 505, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 471, part (Charco Escondido, Tamaulipas).—SINGLEY, Rep. Geol. Surv. Texas, 1894, 372 (Santa Maria to Rio Grande City, Texas).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 475, pl. 6, figs. 30-32 (eggs).—NEHRLING, Our Native Birds, etc., ii, 1896, 274.

[*Icterus*] *cucullatus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part.

[*Icterus cucullatus*] var. *cucullatus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 183, part.

[*Icterus*] *cucullatus* RIDGWAY, Man. N. Am. Birds, 1887, 375, part.

*Pendulinus cucullatus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 60, part (monogr.).

*Icterus cucullatus sennetti* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 152 (Brownsville, Texas; coll. U. S. Nat. Mus.).

#### ICTERUS CUCULLATUS NELSONI Ridgway.

##### NELSON'S ORIOLE.

Similar to *I. c. sennetti*, but still paler and with forehead wholly yellow; adult male with the general color clear cadmium or indian yellow, without any orange tinge; adult female very similar to that of *I. c. sennetti*, but averaging slightly lighter in color, the yellow of under parts usually rather purer; wing averaging decidedly longer, but tail shorter, and bill longer and more slender.

*Adult male*.—Length (skins), 175.3-198.1 (188.5); wing, 86.4-90.4 (88.4); tail, 81.8-96 (89.9); culmen, from base, 20.8-22.1 (21.6); depth of bill at base, 6.9-7.4 (7.1); tarsus, 21.6-23.4 (22.4); middle toe, 15.5-16.8 (16)<sup>1</sup>.

*Adult female*.—Length (skins), 175.3-185.4 (178.3); wing, 80.8-82.8 (81.8); tail, 80.5-83.3 (82); culmen, from base, 19.8-20.8 (20.3); depth of bill at base, 6.9-7.4 (7.1); tarsus, 21.6-22.4 (21.8); middle toe, 14.5-

- Arizona; habits).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 269, part.—  
 BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 200 (s. Arizona; remarks on  
 plumage).—BELDING, Proc. U. S. Nat. Mus., vi, 1883, 343 (Guaymas, Sonora),  
 541 (La Paz, Lower California).—SCOTT (W. E. D.), Auk, ii, 1885, 159–165  
 (s. Arizona; breeding habits).—SCLATER, Cat. Birds Brit. Mus., xi, 1886,  
 376, part (Arizona; La Paz, Lower California; California; Mazatlan).  
 [*Icterus*] *cucullatus* SCLATER and SALVIN, Nomin. Av. Neotr., 1873, 36, part.  
 [*Icterus cucullatus*] var. *cucullatus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am.  
 Birds, ii, 1874, 183, part.  
*Pendulinus cucullatus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 60, part (Lower  
 California).  
*Icterus cucullatus nelsoni* RIDGWAY, Proc. U. S. Nat. Mus., viii, no. 2, Apr. 20, 1885,  
 19, in text (Tucson, Arizona; coll. U. S. Nat. Mus.).—AMERICAN ORNITHOLO-  
 GISTS' UNION, Check List, 1886, no. 505a.—EVERMANN, Auk, iii, 1886, 181  
 (Ventura Co., California; n. to Santa Barbara).—SCOTT (W. E. D.), Auk, iv,  
 1887, 23 (Santa Catalina Mts., s. Arizona, 4,000–6,000 ft.).—MORCOM, Bull.  
 Ridgw. Orn. Club, no. 2, 1887, 48 (Banning, San Diego Co., California; Yuina,  
 Arizona).—EMERSON, Bull. no. 7, Calif. Ac. Sci., 1887, 428 (Poway, San  
 Diego Co., California).—ANTHONY, Zoe, iv, 1893, 239 (San Pedro Martir  
 Mts., Lower California, up to 4,500 ft.).—ALLEN, Bull. Am. Mus. N. H., v,  
 1893, 37 (Bisbee, s. Arizona).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895,  
 476, pl. 7, figs. 1, 2 (eggs).—NEHRLING, Our Native Birds, etc., ii, 1896, 275,  
 pl. 31, fig. 3.—MERRIAM (Florence), Auk, xiii, 1896, 120 (Twin Oaks, San  
 Diego Co., California, breeding).—GRINNELL, Pub. ii, Pasadena Ac. Sci.,  
 1898, 33 (Los Angeles Co., in summer, up to 4,000 ft.).  
 [*Icterus*] *cucullatus nelsoni* RIDGWAY, Man. N. Am. Birds, 1887, 376.  
 [*Icterus cucullatus*] a. Subsp. *nelsoni* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 376, in  
 list of specimens (Arizona; California; La Paz, Lower California; Mazatlan).  
*Icterus nelsoni* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 472.

### ICTERUS CUCULLATUS IGNEUS Ridgway.

#### FIERY ORIOLE.

Similar to *I. c. cucullatus*, but coloration more intense; adult male with the orange averaging richer and purer (usually pure cadmium orange), often tinged with or inclining to flame scarlet on chest; adult female very different from that of *I. c. cucullatus*, the under parts being rich saffron yellow or light cadmium yellow, the pileum, hind-neck, rump, and upper tail-coverts similar but duller; wing averaging decidedly longer.

*Adult male*.—Length (skins), 186.7–204.5 (195); wing, 86.4–89.4 (87.1); tail, 92.5–96 (94.5); culmen, from base, 19.6–21.6 (20.6); depth of bill at base, 7.4–8.1 (7.9); tarsus, 20.8–23.4 (22.4); middle toe, 14.5–17 (15.5).<sup>1</sup>

*Adult female*.—Length (skins), 154.7–209.5 (188.2); wing, 76.2–82 (79.2); tail, 78.2–94 (85.1); culmen, from base, 19–20.3 (19.8); depth of bill at base, 7.9–8.4 (8.1); tarsus, 22.1–22.3 (22.2); middle toe, 15.2–16.3 (15.7).<sup>2</sup>

<sup>1</sup>Seven specimens.

<sup>2</sup>Five specimens.

Yucatan (Silam; Merida; Chichen-Itza; Progreso; La Vega; Puerto Morelos) and Campeche (Tokaltun); Mugerex Island (accidental?); British Honduras (Belize)?

(?) *Icterus cucullatus* (not of Swainson?) SCLATER and SALVIN, *Ibis*, 1859, 20 (Belize, British Honduras).—SALVIN, *Ibis*, 1859, 466 (Belize).

*Icterus cucullatus* BOUCARD, *Proc. Zool. Soc. Lond.*, 1883, 445 (Silam, Yucatan).—SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 376, part.—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1887, 471, part (Merida and Silam, Yucatan).

*Icterus cucullatus igneus* RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, no. 2, Apr. 20, 1885, 19, in text (Yucatan; coll. U. S. Nat. Mus.).—STONE, *Proc. Ac. Nat. Sci. Phila.*, 1890, 209 (Progreso, Yucatan).

*I[cterus] cucullatus igneus* RIDGWAY, *Man. N. Am. Birds*, 1887, 376.

[*Icterus cucullatus*] c. Subsp. *igneus* SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 377, part, in list of specimens (Belize, British Honduras?; Merida and Silam, Yucatan).

#### ICTERUS CUCULLATUS COZUMELÆ Nelson.

##### COZUMEL ORIOLE.

Similar to *I. c. igneus*, but female decidedly smaller, with larger bill and paler coloration, the back grayer and rump and upper tail-coverts more olivaceous (less yellowish); adult male slightly smaller than that of *I. c. igneus*, but similar in coloration.

*Adult male*.—Length (skins) 180–190 (185); wing, 85–90 (87.5); tail, 90–94 (92); exposed culmen, 19; tarsus, 21–22 (21.5); middle toe, 17–18 (17.5).<sup>1</sup>

*Adult female*.—Length (skins), 169–179 (173.6); wing, 74–79 (76.2); tail, 75–80 (79.6); exposed culmen, 17–20 (18.8); tarsus, 20–24 (22); middle toe, 15–17 (16).<sup>2</sup>

greater wing-coverts without white edgings (but with abrupt white tips), and remiges wholly black except a narrow edging of white for terminal half or less; bill stouter; length (skins), 190–199 (194.3); wing, 81–86 (84); tail, 89–90 (89.3); exposed culmen, 18–19 (18.3); tarsus, 21–24 (23); middle toe, 16–17 (16.3).<sup>1</sup>

*Adult female*.—Not seen.

Mugeres Island, Yucatan.

*Icterus cucullatus* (not of Swainson) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 471, part (Mugeres Island).

*Icterus cucullatus duplexus* NELSON, Proc. Biol. Soc. Wash., xiv, Sept. 25, 1901, 173 (Mugeres Island, Yucatan; coll. U. S. Nat. Mus.).

### ICTERUS GIRAUDII Cassin.

#### GIRAUD'S ORIOLE.

*Adults (sexes alike), summer plumage*.—Forehead, lores, orbital, suborbital, and malar regions, chin, throat, upper chest (except laterally), wings (except more anterior lesser coverts), and tail, uniform black; rest of plumage cadmium yellow; scapulars chiefly black but mixed with yellow toward interscapular region;<sup>2</sup> bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet horn color or grayish dusky (bluish gray in life?).

*Winter (or freshly assumed) plumage*.—Similar to summer plumage, but yellow of upper parts more or less obscured by an olive tinge, especially on pileum and hindneck.

*Immature (second year ?)*.—Similar to adults but duller in color, the upper parts yellowish olive or dull olive-yellow, the wings and tail dusky, the former with narrow and indistinct dull grayish edgings, the lateral rectrices edged with light olive-greenish.

*Young (first plumage)*.—Pileum, auricular region, hindneck, rump, and upper tail-coverts ochre-yellowish, more or less tinged with olive, especially on back; malar region, chin, throat, and chest light saffron yellow; rest of under parts light chrome yellow; wings dull blackish, the coverts and secondaries edged with light olive, the primaries more narrowly edged with dull grayish; tail dull blackish with indistinct paler edgings, the lateral feathers with whitish shafts.

*Adult male*.—Length (skins), 189.2–233.7 (210.1); wing, 91.4–111.3 (102.1); tail, 95.8–108.7 (99.3); culmen, from base, 22.9–26.9 (24.4); depth of bill at base, 9.9–11.7 (10.7); tarsus, 25.9–28.2 (26.9); middle toe, 17–20.3 (18.8).<sup>3</sup>

*Adult female*.—Length (skins), 182.9–195.6 (188.5); wing, 86.4–90.9 (88.4); tail, 82.6–94 (88.4); culmen, from base, 22.1–23.4 (22.6); depth

<sup>1</sup> Three specimens.

<sup>2</sup> Sometimes there is a slight admixture of black on outer side of thighs.

<sup>3</sup> Eighteen specimens.

of bill at base, 10.2-11.2 (10.7); tarsus, 23.6-26.2 (24.9); middle toe, 17-18.3 (17.3).<sup>1</sup>

Southern Mexico, in States of Vera Cruz (Santecomapan), Chiapas (San Cristobal), and Yucatan, southward through Central America to Colombia (Rio Truando; Nercua; Bogota; Ibaque; Medellin, province Antioquia), and Venezuela (Caracas).

*Icterus gairaudii* CASSIN, Proc. Ac. Nat. Sci. Phila., 1847, 333 (Bogota, Colombia; coll. Ac. Nat. Sci. Phila.?); 1860, 140 (Rio Truando, Colombia); 1867, 52 (monogr.); Journ. Ac. Nat. Sci. Phila., ser. 2, i, 1848, 138, pl. 17.—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill, Panama R. R.).—SCLATER, Cat. Am. Birds, 1862, 133 (Guatemala; Bogota).

*Icterus gairaudi* SCLATER, Proc. Zool. Soc. Lond., 1855, 154 (Bogota; crit.); 1857, 228 (Santecomapan, Vera Cruz; crit.); Ibis, 1873, 373 (Chontales, Nicaragua); 1883, 366 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 379 (n. Yucatan; Tactic and Volcan de Fuego, Guatemala; Chontales, Nicaragua; Boquete de Chitra, Chitra, and Santa Fé, Veragua; Chepo, Lion Hill, Paraiso Station, Panama, and Colon, Panama R. R.; Medellin and Bogota, Colombia; Venezuela).—SCLATER and SALVIN, Ibis, 1859, 20 (Guatemala); Proc. Zool. Soc. Lond., 1864, 353 (Lion Hill); 1868, 167 (Caracas, Venezuela); 1879, 509 (Envigado, Concordia, and Medellin, prov. Antioquia, Colombia).—SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (Santa Fé, Veragua); 1870, 190 (Chitra and Castillo, Veragua); Cat. Strickland Coll., 1882, 263 (Guatemala).—WYATT, Ibis, 1871, 330 (Colombia, up to 7,000 ft.).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9; Anal. Mus. Nac. Costa Rica, i, 1887, 112 (Veragua).—BOCCARD, Proc. Zool. Soc. Lond., 1883, 445 (Yucatan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 469.—RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 588 (Segovia R., Honduras).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 280 (Chichen-Itza, Yucatan).—STONE, Proc. Ac. Nat. Sci. Phila., 1899, 307 (Ibaque, centr. Colombia).—SALVADORI, Boll. Mus. Zool., etc., Torino, xiv, no. 339, 1899, 5 (Punta de Sabana, Isthmus Panama).

<sup>1</sup> Four specimens.

Specimens from different localities compared in measurements as follows:



[*Icterus*] *giraudi* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

(?) *Xanthornus chrysater* LESSON, Oeuvr. Buffon, vii, 1847, 332 (Mexico).—BONAPARTE, Consp. Av., i, 1850, 434 (Mexico).

*Icterus melanopterus* HARTLAUB, Rev. et Mag. de Zool., 1849, 275 (Caracas, Venezuela; coll. Bremen Mus.).—MOORE, Proc. Zool. Soc. Lond., 1859, 58 (Omoa, Honduras).

[*Xanthornus*] *melanopterus* BONAPARTE, Consp. Av., i, 1850, 434 (Colombia).

[*Icterus*] *melanopterus* CABANIS, Mus. Hein., i, 1851, 185 (Colombia; Venezuela).

### ICTERUS GUALANENSIS Underwood.

#### GUALAN ORIOLE.

Similar to *I. giraudii*, but having the black of the head extended to the occiput. Total length, 215.9; culmen, 25.4; wing, 105.4; tail, 104; tarsus, 27.9. (Translation of original description.<sup>1</sup>)

*Icterus gualanensis* UNDERWOOD, Bull. Brit. Orn. Club, no. lv, June 30, 1898, p. lix (Gualan, Guatemala; location of type not stated).

The above description applies very well to some immature examples of *I. prosthelas*.

### ICTERUS PUSTULATUS (Wagler).

#### SCARLET-HEADED ORIOLE.

*Adult male in summer*.—Lores, anterior portion of malar region, chin, and throat, black; rest of head and neck intense orange, sometimes flame scarlet, more rarely yellowish orange, the remaining under parts paler orange or yellow; back, rump, upper tail-coverts and lesser wing-coverts orange or yellow, the back streaked with black; inner webs of scapulars mostly orange or yellow, outer webs black; middle wing-coverts white, with basal portion of inner webs black, this increasing in extent on innermost feathers; rest of wing black, with innermost greater coverts edged with white, the rest broadly tipped with white on outer webs; secondaries edged with white, except on basal portion of outermost five or six; primaries (except the first) with basal portion of outer webs white, forming a more or less extensive patch, and portion of outer webs from sinuation to tip narrowly edged with white; tail black, with concealed basal portion of the rectrices orange or yellow (shafts of this portion white), the outermost rectrices broadly tipped with dull whitish or pale brownish gray; bill black, the basal half of mandible bluish gray; legs and feet horn color (in dried skins).

*Adult male in winter*.—Similar to the summer plumage, but white edgings to wing feathers much broader, often strongly tinged with gray; orange or yellow of back, rump, etc., more or less tinged with olive, the back often tinged or suffused with gray.

*Adult female in summer*.—Pileum, hindneck, back, inner webs of scapulars, rump, and upper tail-coverts wax yellow or olivaceous

<sup>1</sup> The measurements converted from inches to millimeters.

orange-yellow, deeper and more orange on forehead, the back more or less broadly streaked with black; lores, anterior portion of malar region, chin, and throat black, as in adult male; space between the black throat-patch and eyes orange or yellow, gradually becoming more yellow posteriorly, the under parts being indian yellow or saffron yellow, faintly tinged on sides and flanks with olive; scapulars grayish on outer webs, yellowish olive on inner webs, and with more or less distinct median streaks of dusky; lesser wing-coverts olive-yellowish, with dusky central spots; middle coverts black at base, broadly tipped with dull whitish; rest of wings dusky, relieved by grayish white or pale gray edgings to all the feathers; tail light olivaceous (sometimes partly blackish), with edges more yellowish; color of bill and feet as in the male.

*Adult female in winter.*—Similar to the summer plumage, but upper parts much tinged with gray, especially on back, and grayish white or light gray wing-edgings broader.

*Young.*—Similar to the winter female, but without any black on throat, etc.; streaks on back obsolete, and colors duller.<sup>1</sup>

*Adult male.*—Length (skins), 186.7–205.7 (198.1); wing, 98.6–106.2 (100.8); tail, 87.1–97.3 (90.9); exposed culmen, 19.8–22.9 (21.3); depth of bill at base, 10.7–12.4 (11.7); tarsus, 23.6–25.4 (24.9); middle toe, 16–17.8 (17.3).<sup>2</sup>

*Adult female.*—Length (skins), 185.4–203.2 (192.3); wing, 90.2–96.3 (93); tail, 80.8–91.4 (87.1); exposed culmen, 18.8–22.9 (20.6); depth of bill at base, 10.7–12.2 (11.2); tarsus, 24.1–25.4 (24.6); middle toe, 16–17.8 (17).<sup>3</sup>

Western and southern Mexico, in States of Chihuahua (near Batopilas), Sonora (Alamos), Sinaloa (Mazatlan; Plumasas; Rosario),

Lucas, Lower California").—SCLATER and SALVIN, *Exotic Orn.*, pt. iv, 1867, pl. 24.—CASSIN, *Proc. Ac. Nat. Sci. Phila.*, 1867, 48 (monogr.; Mazatlan).—SUMICHRAST, *Mem. Bost. Soc. N. H.*, i, 1869, 552 (hot region, Vera Cruz).—LAWRENCE, *Mem. Bost. Soc. N. H.*, ii, 1874, 280 (Mazatlan; Tepic; plains of Colima; Manzanillo Bay; habits, etc.).—SALVIN, *Cat. Strickland Coll.*, 1882, 264 (Mexico); *Proc. Zool. Soc. Lond.*, 1883, 422 (Acapulco).—FERRARI-PEREZ, *Proc. U. S. Nat. Mus.*, ix, 1886, 150 (Chietla, Puebla; Janhuiatlan, Oaxaca).—RIDGWAY, *Proc. U. S. Nat. Mus.*, ix, 1886, 150 (Chietla, etc., crit.).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1887, 477.—JOUY, *Proc. U. S. Nat. Mus.*, xvi, 1893, 781 (Barranca Ibarra, Jalisco).

[*Icterus*] *pustulatus* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 36.

*Pendulinus californicus* LESSON, *Rev. Zool.*, 1844, 436 ("Lower California"); *Oeuvr. Buff., Suppl.*, vii, 1831, 333.

[*Pendulinus*] *californicus* BONAPARTE, *Consp. Av.*, i, 1850, 433.

*Pendulinus californicus* BAIRD, in Stansbury's *Rep. Gt. Salt Lake*, 1852, 331 ("California").

*Icterus sclateri* (not of Cassin) LANTZ, *Trans. Kansas Ac. Sci.* for 1896-97 (1899), 222 (Altata and Culiacan, Sinaloa).

### ICTERUS SCLATERI Cassin.

#### SCLATER'S ORIOLE.

Similar to *I. pustulatus* but larger, with black streaks on back much broader (the black predominating over the yellow or orange); middle wing-coverts with less black on basal portion (sometimes none), and (usually) the general color of head, etc., yellow or orange-yellow rather than orange; adult female similar to that of *I. pustulatus*, but larger; upper parts lighter and more yellow, with black streaks on back broader; wing-edgings broader and purer white, and color of under parts, etc., lemon-yellow, rather than orange or saffron yellow.

*Adult male*.—Length (skins), 193-215.9 (203.7); wing, 101.6-115.1 (107.2); tail, 89.4-104.1 (93.2); exposed culmen, 19.8-23.1 (21.3); depth of bill at base, 10.7-12.4 (11.7); tarsus, 23.1-26.4 (24.6); middle toe, 15.5-18.3 (17).<sup>1</sup>

*Adult female*.—Length (skins), 186.7-203.2 (194.3); wing, 94-101.3 (97.5); tail, 81.8-88.6 (85.9); exposed culmen, 20.6-21.1 (20.8); depth of bill at base, 10.7-11.9 (11.2); tarsus, 22.9-24.4 (23.4); middle toe, 16-17.8 (16.8).<sup>2</sup>

Southern Mexico, in States of Oaxaca (Tehuantepec; Cuicatlan; Santa Efigenia; Oaxaca; Juchitan) and Chiapas (Tonalá), south through Guatemala (San Gerónimo), Salvador, and Honduras to Nicaragua (Managua; San Juan; Pres Granada); western Costa Rica (Liberia)?.

<sup>1</sup> Nine specimens.

<sup>2</sup> Four specimens.

The series from Nicaragua is much too small to show whether there are constant differences or not between birds from that portion of the country and those from southern Mexico. The single Nicaraguan specimen measured shows decided differ-

*Icterus mentalis* (not of Lesson) CABANIS, Mus. Hein., i, 1851, 185, footnote (according to Sclater).—SCLATER, Cat. Am. Birds, 1862, 134, excl. syn. (San Gerónimo, Guatemala).—SALVIN and SCLATER, Ibis, 1860, 275 (San Gerónimo).—OWEN, Ibis, 1861, 62 (descr. eggs).

*Icterus sclateri* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 49 (San Juan and Pres Granada, Nicaragua; San Gerónimo, Guatemala; type, from Nicaragua, in coll. Ac. Nat. Sci.).—SCLATER, Ibis, 1883, 371 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 385 (San Gerónimo, Guatemala; Tonalá, Chiapas).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 476, pl. 33, fig. 1 (San Juan del Rio, Santa Esigenia, and Juchintan, Oaxaca; Tonalá, Chiapas; San Gerónimo, Guatemala; San Juan, Nicaragua).

[*Icterus*] *sclateri* SCLATER and SALVIN, Noin. Av. Neotr., 1873, 36.

*Icterus formosus* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., x, May, 1872, 184 (Juchitan, Oaxaca; coll. U. S. Nat. Mus.); Bull. U. S. Nat. Mus., no. 4, 1876, 23 (do.).—SCLATER, Ibis, 1883, 372 (monogr.).

(?) *Icterus pustulatus* (not *Psarocolius pustulatus* Wagler) ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 112 (Liberia, w. Costa Rica).

#### ICTERUS GRAYSONII Cassin.

##### GRAYSON'S ORIOLE.

Similar to *I. pustulatus*, but much larger and lighter colored, and the back either without black streaks or with only a few very narrow ones.

*Adult male in summer*.—General color, except wings and tail (but including lesser wing-coverts), orange-yellow or saffron yellow (more orange on anterior portion of head and space surrounding black throat-stripe), the back sometimes with a few narrow streaks of black; lores, anterior portion of malar region, chin, and throat black; lesser wing-coverts rather lighter or clearer yellow; middle coverts still paler yellow, sometimes white, tinged with yellow, with part of inner webs

lateral pairs broadly tipped with dull whitish; bill black, the basal portion of mandible bluish; legs and feet (in dried skins), dusky horn color.

*Adult male in winter.*—Similar to the summer male, but plumage softer and white edgings on wings broader.

*Adult female in summer.*—Above light yellowish olive, becoming more yellowish on pileum, where inclining to orange-yellow on forehead and superciliary region, the back usually with a few narrow streaks of dusky; lores, anterior portion of malar region, chin, and throat black; sides of head and under parts (except as described) yellow, more orange-yellow anteriorly, the sides and flanks slightly tinged with olive; wings as in the male but ground color dusky instead of black and the white edgings tinged with gray.

*Adult female in winter.*—Similar to the summer female, but plumage softer and whitish wing-edgings broader.

*Adult male.*—Length (skins), 203.2–226.1 (211.8); wing, 102.9–105.4 (104.1); tail, 90.2–94 (91.9); exposed culmen, 24.9–26.7 (25.7); depth of bill at base, 12.7–13; tarsus, 25.9–26.7 (26.4); middle toe, 17.8–18.3 (18).<sup>1</sup>

*Adult female.*—Length (skins), 193–203.2 (197.9); wing, 94–99.1 (96.8); tail, 83.3–87.1 (85.6); exposed culmen, 22.9–24.9 (24.4); depth of bill at base, 10.9–12.7 (11.9); tarsus, 25.4–25.9 (25.4); middle toe, 17–17.8 (17.3).<sup>1</sup>

Tres Marias Islands (islands of Maria Madre and Maria Cleofa), western Mexico.

*Icterus graysonii* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 48 (Tres Marias Islands, w. Mexico; coll. U. S. Nat. Mus.).

*Icterus graysoni* FINSCH, Abh. Nat. Ver. Bremen, 1870, 336 (Tres Marias; full descriptions).—GRAYSON, Proc. Bost. Soc. N. H., xiv, 1871, 280 (habits, etc.).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 280.—SCLATER, Ibis, 1883, 374 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 387.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 478.—NELSON, North Am. Fauna, no. 14, 1898, 50 (habits; notes; descr. nest and eggs).

[*Icterus*] *graysoni* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

### ICTERUS AURATUS Bonaparte.

#### ORANGE ORIOLE.

Similar to *I. cucullatus igneus*, but whole back orange or orange-yellow (sometimes streaked with black in female), lesser wing-coverts orange, and primaries broadly edged with white basally.

*Adult male.*—Lores, eyelids, anterior half of cheeks (back to about middle of eye), chin, and whole throat black; scapulars black, somewhat intermixed with orange or orange-yellow next to interscapular region; greater wing-coverts and remiges black, more or less edged

<sup>1</sup> Five specimens.

with white, especially the middle secondaries and longer primaries, the latter broadly edged with white basally (the white occupying full width of outer web at base of the primaries); middle wing-coverts white, producing a broad band; tail black, the lateral rectrices more or less broadly margined at tips with light grayish; rest of plumage, including lesser wing-coverts, rich cadmium orange or orange-yellow, most intense on head, neck, and chest; bill black, with basal portion of mandible bluish gray (pale grayish blue or bluish white in life?); legs and feet grayish dusky (bluish gray in life?); length (skins), 184.2-209.6 (192.5); wing, 88.6-94.7 (91.9); tail, 84.6-91.9 (89.4); culmen, from base, 19.8-22.1 (20.8); depth of bill at base (one specimen), 8.6; tarsus, 23.9-25.1 (24.4); middle toe, 15.7-17 (16.3).<sup>1</sup>

*Adult female*.—Similar to the adult male, and perhaps not always distinguishable, but usually (?) slightly duller in color, especially on the back, which is more or less tinged with olive and sometimes marked with a few black streaks; lesser and middle wing-coverts partly black; length (skins), 191.8-203.2 (197.6); wing, 87.4-93.2 (91.2); tail, 86.6-91.2 (88.1); culmen, from base, 20.3-20.8 (20.6); depth of bill at base (one specimen), 8.4; tarsus, 24.6-24.9 (24.9); middle toe, 15.2-16.8 (16.3).<sup>1</sup>

Yucatan (Merida; Tekanto; Chichen Itza; Temax; El Campo), including outlying island of Meco.

*Ict[erus] auratus* BONAPARTE, *Consp. Av.*, i, June 20, 1850, 435 (Yucatan; coll. Brussels Mus.; ex Du Bus, manuscript).

*Icterus auratus* CASSIN, *Proc. Ac. Nat. Sci. Phila.*, 1867, 50 ("Mexico"; monogr.).—LAWRENCE, *Ann. Lye. N. Y.*, ix, 1869, 271 (Merida, n. Yucatan; crit.).—BOUCARD, *Proc. Zool. Soc. Lond.*, 1883, 445.—SCLATER, *Ibis*, 1883, 369 (monogr.); *Cat. Birds Brit. Mus.*, xi, 1886, 382 (n. Yucatan).—SALVIN and GODMAN, *Birds Centre-Am. Av.*, i, 1887, 473, pl. 33, fig. 2.—SALVIN, *Ibis*,

more or less edged with white at base,<sup>1</sup> the lateral rectrices more or less broadly margined at tip with whitish; rest of plumage, including lesser and middle wing-coverts, rich lemon or cadmium yellow, brightest and clearest on head, neck, and under parts (sometimes tinged with orange on head, neck, and chest), the back and scapulars usually slightly tinged with olive, and occasionally with a few narrow streaks of black;<sup>2</sup> bill black with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet grayish dusky or horn color (bluish gray in life?).

*Immature (second year ?).*—Similar to adults, but wings grayish dusky instead of black, with pale grayish edgings; lesser wing-coverts blackish centrally, margined with yellowish olive-green or olive-yellow; middle coverts blackish basally, tipped with light yellow; tail yellowish olive-green or grayish dusky (or the two colors mixed); yellowish of upper parts more decidedly inclining to olive-green, and that of head, neck, and under parts less pure or intense than in adults.

*Young (first plumage).*—Above yellowish olive-green, more yellowish on pileum, hindneck, and lower rump; beneath, including malar region, chin, and entire throat lemon yellow, more or less tinged with olive-green, especially on sides and flanks; wings grayish dusky, the middle coverts broadly tipped with olive-yellow; greater coverts tipped with white or pale yellowish and edged with olive-gray; remiges edged with light grayish, most broadly on tertials; tail yellowish olive-green, the middle rectrices darker.

*Adult male.*—Length (skins), 191.8–205.7 (196.1); wing, 87.6–94.5 (91.2); tail, 83.3–90.7 (86.4); culmen, from base, 19.8–25.4 (22.4); depth of bill at base, 10.2–10.4 (10.2); tarsus, 25.1–28.5 (26.4); middle toe, 17.5–19.6 (18.3).<sup>3</sup>

*Adult female.*—Length (skins), 181.6–188 (185.2); wing, 82.6–87.1 (86.1); tail, 76.5–84.3 (81); culmen, from base, 20.6–24.1 (22.1); depth

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<sup>1</sup>This white edging at base of longer primaries is sometimes so much reduced as to be practically hidden by the primary coverts, this being the case in all specimens examined from Trinidad (six in number) and in all those seen from Venezuela (except one), Guiana, and Brazil; again it may form a conspicuous patch, extending for half an inch or more beyond the tips of the primary coverts, this being the case in the three specimens examined from Santa Marta, Colombia. Whether Colombian birds can be separated by this character can only be determined by examination of a much larger series of specimens.

<sup>2</sup>Only three specimens in a series of twenty-five have any streaks on the back; these are all adults—one of them being from Trinidad, one from Demerara, British Guiana, the third of unknown locality; the last has the lesser and middle wing-coverts wholly pure yellow, but the other two have these feathers, especially the middle coverts, black at the base, and thus correspond with *I. dubusi* (*Icterus xanthornus* var. *α. dubusi* Dubois), which I believe to be merely an individual variation of the present species.

<sup>3</sup>Seven specimens.

of bill at base, 9.4–11.7 (10.4); tarsus, 24.9–27.7 (26.7); middle toe, 15.7–19.1 (17.5).<sup>1</sup>

Caribbean coast district of northern South America, from Cayenne to Colombia: Trinidad and Margarita Island; Isthmus of Panama?

[*Coracias*] *xanthornus* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 108 ("America"; based on *Pica luteo nigro varia* Catesby, Nat. Hist. Carolina, iii, p. 5, pl. 5).

[*Oriolus*] *xanthornus* GÜELIN, Syst. Nat., i, pt. i, 1788, 391.

*Icterus xanthornus* DAUDIN, Traité Orn., ii, 1800, 334, part (includes *I. leucopteryx*). —CABANIS, in Schomburgk's Reise Brit. Guiana, iii, 1848, 880. —RECHMEISTER, Syst. Ueb. Th. Bras., iii, 1856, 269. —SCLATER, Cat. Am. Birds, 1862, 133 (Trinidad; Cayenne; Colombia); Ibis, 1883, 368 (coast Colombia, Venezuela, and Guiana to Rio Branco; Trinidad); Cat. Birds Brit. Mus., xi, 1886, 380. —TAYLOR, Ibis, 1864, 84 (Trinidad). —CABIN, Proc. Ac. Nat. Sci. Phila., 1867, 50 (monogr.; Venezuela; Cayenne; Trinidad; n. Brazil). —SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1868, 167 (Venezuela). —FINCH, Proc. Zool. Soc. Lond., 1870, 578 (Trinidad). —PELZELN, Orn. Bras., 1871, 195. —WYATT, Ibis, 1871, 329 (Santa Marta, Colombia). —SALVIN and GODMAN, Ibis, 1880, 123 (Santa Marta). —ALLEN, Bull. Am. Mus. N. H., iv, 1892, 53 (Carúpano, Venezuela). —CHAPMAN, Bull. Amer. Mus. N. H., vi, 1894, 36 (Trinidad; song; descr. nest); Auk, xiv, 1897, 368 (Venezuela; crit.). —ROBINSON, Flying Tripto Tropics, 1895, 160 (Baranquilla, Colombia). —RICHMOND, Proc. U. S. Nat. Mus., xviii, 1896, 675 (Margarita I., Venezuela; crit.). —PHELPS, Auk, xiv, 1897, 364 (Cumanacoa and Cumana, Venezuela). —BANGS, Proc. Biol. Soc. Wash., xii, 1898, 138 (Santa Marta). —ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 162 (Bonda, etc., prov. Santa Marta).

[*Icterus*] *xanthornus* CABANIS, Mus. Hein., i, 1851, 185 (Venezuela; Guiana).

[*Icterus xanthornus*] *α. xanthornus* RIDGWAY, Proc. U. S. Nat. Mus., vii, July 29, 1884, 176 (in synonymy).

[*Icterus*] *xanthornus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

*Agelaius xanthornus* VIEILLLOT, Nouv. Dict. d'Hist. Nat., xxxiv, 1819, 543.

*Psittocolius* *xanthornus* WAGLER, Syst. Av., 1827, *Psittocolius*, no. 15.

[*Oriolus*] *xanthornus* LATHAM, Index Orn., i, 1790, 181.



[*Icterus xanthornus*.] Var. *α. dubusii* DUBOIS, Bull. Ac. Roy. Belg., ser. 2, xl, Dec., 1875, 16 (Isthmus of Panama; coll. Brussels Mus.).

*Icterus dubusi* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 381 (Panama?).

[*Icterus xanthornus*.] Var. *β. marginalis* DUBOIS, Bull. Ac. Roy. Belg., ser. 2, xl, Dec., 1875, 17 (Isthmus of Panama; coll. Brussels Mus.).

### ICTERUS XANTHORNUS CURASOENSIS (Ridgway).

#### CURAÇAO ORIOLE.

Similar to *I. x. xanthornus*, but with much longer bill; young much paler than that of *I. x. xanthornus*.

*Adult male*.—Length (skins), 188–193 (190.5); wing, 90.2–92.5 (91.2); tail, 84.6–85.6 (85.1); culmen, from base, 25.9–27.9 (26.9); depth of bill at base, 10.2–10.7 (10.4); tarsus, 25.1–25.9 (25.4); middle toe, 18–19.8 (18.8).<sup>1</sup>

Islands of Curaçao, Bonaire, and Aruba, southern Caribbean Sea.

*Icterus curasoënsis* RIDGWAY, Proc. U. S. Nat. Mus., vii, no. 11, July 29, 1884, 174 (Curaçao Island; coll. U. S. Nat. Mus.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 381.

*Icterus xanthornus curasoënsis* ROBINSON, Flying Trip to Tropics, 1895, 142 (in text), 165, colored plate (facing p. 142).

*Icterus xanthornus curacaoensis* BERLEPSCH, Journ. für Orn., 1892, 82 (Curaçao; crit.).—HARTERT, Ibis, July, 1893, 295 (Aruba; crit.; descr. nest and eggs, song, etc.), 317 (Curaçao), 328 (Bonaire).

*Icterus curacoënsis* PETERS, Journ. für Orn., 1892, 114 (Curaçao).

### ICTERUS LEUCOPTERYX (Wagler).

#### JAMAICAN ORIOLE.

*Adults (sexes alike)*.—Pileum, hindneck, back, scapulars, rump, and upper tail-coverts plain yellowish olive-green, becoming more decidedly yellowish posteriorly; lesser wing-coverts light yellowish olive-green or olive-yellow; middle and greater coverts white, forming a large and very conspicuous patch on the wing; rest of wing black, the tertials broadly edged with white; lores,<sup>2</sup> anterior half of suborbital and malar regions, chin, throat, and median portions of upper chest uniform black; rest of under parts indian yellow, clearer or purer (rich lemon or chrome) yellow on abdomen and under tail-coverts, more tinged with olive laterally and anteriorly; sides of head (posterior to black “mask”) similar in color to breast, etc.; bill black, with basal portion of mandible bluish gray (pale grayish blue in life?); legs and feet grayish dusky (grayish blue in life?).

*Immature (second year?)*.—Similar to adults, but tail yellowish olive-green; wings grayish dusky with narrow grayish white or pale gray edgings (broader on tertials), the white patch on middle and greater coverts more broken, less conspicuous.

<sup>1</sup>Two specimens.

<sup>2</sup>Sometimes anterior portion of forehead also.

*Young (first plumage).*—Similar to the immature plumage described above, but yellow of under parts and sides of head much paler (dull canary yellow); color of upper parts duller and browner; black "mask" much duller and less sharply defined, and the white on wing-coverts reduced to two broad bands (across ends of middle and greater coverts, respectively).

*Adult male.*—Length (skins), 189.2–191.8 (190.5); wing, 99.6–105.7 (102.9); tail, 81.3–87.6 (84.8); culmen, from base, 23.1–24.4 (23.9); depth of bill at base, 10.2–10.7 (10.4); tarsus, 23.6–25.1 (24.4); middle toe, 17–18.3 (17.5).<sup>1</sup>

*Adult female.*—Length (skin), 194.3; wing, 101.6; tail, 83.6; culmen, from base, 22.9–25.1 (23.9);<sup>2</sup> depth of bill at base, 10.7;<sup>3</sup> tarsus, 23.4–24.9 (24.1); middle toe, 17–18.3 (17.5).<sup>2</sup>

Island of Jamaica, Greater Antilles.

(?) [*Oriolus*] *nidipendulus* Gmelin, Syst. Nat., i, pt. i, 1788, 390 (Jamaica; based on *Hanguet Oriole* Latham, Synopsis, i, pt. 2, 437, etc.)—LATHAM, Index Orn., i, 1790, 181.

*Ps[arocolius] leucopteryx* WAGLER, Syst. Av., 1827, *Psarocolius*, sp. 16.

[*Icterus*] *leucopteryx* GOSSE, Birds Jamaica, 1847, 226.—SCLATER, Proc. Zool. Soc. Lond., 1861, 74; Cat. Am. Birds, 1862, 134; Ibis, 1883, 374 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 387 (Moneague, Jamaica).—ALBRECHT, Journ. für Orn., 1862, 197.—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 299.—CORY, Auk, iii, 1886, 218 (synonymy and diagnosis); Birds W. I., 1889, 105 (do.); Cat. W. I. Birds, 1892, 15, 110 (Jamaica).—SCOTT, Auk, x, 1893, 178 (crit.; song).—FIELD, Auk, xi, 1894, 126.

[*Icterus*] *leucopteryx* BONAPARTE, Consp. Av., i, 1850, 436 ("Mexico").—GRAY, Hand-list, ii, 1870, 32, no. 6453.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.—CORY, List Birds W. I., 1885, 13.

[*Icterus*] *leucopteryx* NEWTON (A. and E.), Handb. Jamaica, 1881, 104.

(*Cross* typographical error *leucopteryx* Cory, Cat. W. I. Birds, 1892, 130.)

"Length, 184.2; wing, 95.3; tail, 76.2; tarsus, 21.6; bill, 21.6." (Original description, the measurements converted to millimeters.)

Island of Grand Cayman (south of Cuba), Greater Antilles.

I have not seen a specimen of this form, which, like *I. laurencii* of St. Andrews Island, is evidently an offshoot of *I. leucopteryx*.

*Icterus bairdi* CORY, Auk, iii, Oct., 1886, 500 (Grand Cayman, Greater Antilles; coll. C. B. Cory); v, 1888, 158; Birds W. I., 1889, 291; Cat. W. I. Birds, 1892, 15, 110, 129, 146.

### ICTERUS LAWRENCII Cory.

#### ST. ANDREW'S ORIOLE.

Similar to *I. leucopteryx*, but slightly smaller, bill longer and more slender, and coloration much lighter; pileum, hindneck, back, scapulars, rump, and upper tail-coverts slightly olivaceous gamboge yellow or wax yellow (more decidedly tinged with olive on back and scapulars); under parts and sides of head clear lemon yellow, scarcely if at all tinged with olive. Young similar to that of *I. leucopteryx* but paler, with white band across terminal portion of greater wing-coverts, broader, and the band on middle coverts pale yellow instead of white.

*Adult*.—Length (skin), 185.4; wing, 101.3; tail, 83.1; culmen, from base, 25.4; depth of bill at base, 10.2; tarsus, 24.6; middle toe, 17.<sup>1</sup>

St. Andrews Island, Caribbean Sea.

*Icterus laurencii* CORY, Descr. six new sp. birds from Old Providence and St. Andrews, May 27, 1887, 2; Auk, iv, July, 1887, 178, 181 (St. Andrews Island, Caribbean Sea; coll. C. B. Cory).

*Icterus laurencei* STONE, Proc. Ac. Nat. Sci. Phila., 1899, 301, in text.

### ICTERUS MESOMELAS MESOMELAS (Wagler).

#### YELLOW-TAILED ORIOLE.

*Adults (sexes alike)*.—Lores, eyelids, anterior half of cheeks (back to or beyond middle of eye), chin, throat, and upper chest (except laterally), back, scapulars, wings (except lesser and middle coverts and outer webs of innermost greater coverts), and six middle rectrices, black; outer webs of longer innermost secondaries edged with white, producing a more or less conspicuous narrow stripe in the closed wing; outer webs of longer primaries narrowly edged with white toward tips; rest of plumage (including lesser and middle wing-coverts, outer webs of innermost greater coverts, and greater part of three outermost rectrices,)<sup>2</sup> rich lemon yellow, deeper (more saffron or cadmium

<sup>1</sup> One specimen, sex not determined.

<sup>2</sup> Base of outermost rectrix black on both webs; second with about basal third of inner web (less of outer web) black, and third with at least basal half of inner web black; sometimes the fourth rectrix is partly yellow (toward end), but frequently it is wholly black.

yellow) on pileum and hindneck; bill black, with basal half of mandible bluish gray (pale grayish blue or bluish white in life?); legs and feet grayish brown or horn color (bluish gray in life?).

*Young (first plumage).*—Pileum and hindneck light yellowish olive-green, becoming more yellow on forehead; back and scapulars dull olive; rump and upper tail-coverts light olive-green or dull yellowish olive-green; wing-coverts dusky olive, the middle series broadly the greater narrowly tipped with dull yellow; remiges dusky, the tertials broadly edged with dull yellow or pale yellowish olive, the longer primaries narrowly edged with whitish; four middle rectrices dusky olive, edged (especially at ends) with pale yellowish olive; rest of rectrices paler olive, with pale yellow shafts and margins; under parts and sides of head canary yellow, the middle of the chest with a crescentic patch (not very distinct) of olive.

*Adult male.*—Length (skins), 208.3–233.7 (219.5); wing, 86.9–94.5 (90.4); tail, 99.3–113.3 (104.6); culmen, from base, 20.6–22.9 (22.1); depth of bill at base, 9.4–10.2 (9.9); tarsus, 27.9–30.5 (29); middle toe, 17.3–19.1 (17.8).<sup>1</sup>

*Adult female.*—Length (skins), 198.1–207 (202.4); wing, 83.8–89.4 (86.6); tail, 94.7–106.9 (100.8); culmen, from base, 20.3–21.6 (20.8); depth of bill at base, 10.2–10.7 (10.4); tarsus, 28.2–28.5; middle toe, 17–18 (17.5).<sup>2</sup>

Southeastern Mexico, in States of Vera Cruz (Tlalcotalpan; Motzoringo; Otatitlan; Cordova; Orizaba), Oaxaca (Minatitlan), Chiapas (Guichicovi), Tabasco, and Yucatan (Calotmul), through Guatemala (Choctum; Coban; Dueñas) and British Honduras (Corosal; Belize) to Honduras (Omoa; San Pedro).

*Psittacus mexicanus* WACER. Isis, 1829, 755 (Mexico).

MOORE, Proc. Zool. Soc. Lond., 1859, 58 (Omoa, Honduras).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 23 (Guichicovi, Chiapas).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 51 (monogr.; Mexico; Guatemala; Yucatan).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (tierra caliente, Vera Cruz).—BOUCARD, Proc. Zool. Soc. Lond., 1883, 445 (Calotmul, Yucatan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 470, part (Cordova and hot country, Vera Cruz; Guichicovi, Chiapas; Calotmul, Yucatan; Belize and Corosal, British Honduras; Coban and Choctum, Guatemala; Omoa and San Pedro, Honduras).  
[*Icterus*] *mesomelas* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part.  
*Icterus mesomelas mesomelas* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 153, in text.  
*Icterus atrogularis* LESSON, Cent. Zool., 1830, 73, pl. 22 (Mexico).  
*Oriolus musicus* CABOT, Proc. Bost. Soc. N. H., i, 1843, 155 (Yucatan); Boston Journ. Nat. Hist., iv, 1844, 465 (do.).

ICTERUS MESOMELAS SALVINII (Cassin).

SALVIN'S ORIOLE.

Similar to *I. m. mesomelas*, but decidedly larger, without trace of white edging to secondaries, and with more black on tail (fourth rectrix wholly black, and much more than basal half of third rectrix black).

*Adult male*.—Length (skins), 215.9–238.8 (228.9); wing, 87.6–101.6 (96.3); tail, 100.3–114.8 (107.7); culmen, from base, 24.4–26.9 (25.4); depth of bill at base, 9.7–10.7 (10.2); tarsus, 30–32.8 (30.7); middle toe, 18.3–21.8 (20.3).<sup>1</sup>

*Adult female*.—Length (skins), 199.7–223.5 (212.3); wing, 86.6–98.3 (92.7); tail, 98.6–108.5 (104.9); culmen, from base, 22.9–24.9 (23.6); depth of bill at base, 10.2; tarsus, 29.7–30.5 (30); middle toe, 19.8–20.3 (20.1).<sup>2</sup>

<sup>1</sup> Ten specimens.  
<sup>2</sup> Five specimens.

Locality.	Wing.	Tail.	Culmen, from base.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Three adult males from Nicaragua.....	98.8	111	25.7	10.4	31.2	20.3
Three adult males from Costa Rica .....	99.8	109	25.9	10.2	30.7	21.1
Three adult males from Panama.....	91.9	104.9	24.6	10.2	30.5	19.8
One adult male from Venezuela .....	91.2	101.6	24.9	9.9	30.5	21.6
FEMALES.						
Two adult females from Nicaragua .....	91.7	103.6	24.4	10.2	29.7	19.8
One adult female from Costa Rica .....	95.3	104.4	.....	10.2	30.5	20.8
Two adult females from Panama.....	92.5	103.4	23.1	10.2	30	20.8

Specimens from Central Colombia ("Bogota") are still smaller than Panama examples, and occasionally have indistinct white edgings to the secondaries. They are thus intermediate between *I. m. salvinii* and *I. m. taczanowskii* (Ridgway, Proc. Biol. Soc. Wash., iii, Apr. 15, 1901, 153), of western Ecuador and Peru, though nearer the former.

Nicaragua (Rio Escondido; Los Sábalos; Greytown) to Colombia (Bogota; Antioquia; Rio Atrato) and Venezuela.

*Icterus mesomelas* (not *Pharocolius mesomelas* Wagler) SCLATER, Proc. Zool. Soc. Lond., 1855, 154 (Bogota, Colombia); Cat. Am. Birds, 1862, 133, part (Bogota); Ibis, 1883, 367, part (monogr.); Cat. Birds Brit. Mus., xi, 1886, 378, part (Valza, Costa Rica; Chepo., Lion Hill, and Panama, Isthmus of Panama).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 354 (Lion Hill, Panama R. R.); 1867, 297 (Blewfields, Nicaragua); 1879, 509 (Antioquia, Colombia).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 297 (Lion Hill); viii, 1865, 181 (Greytown, Nicaragua).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9; An. Mus. Nac. Costa Rica, i, 1887, 112 (Sipurio and Talamanca, Costa Rica).—NUTTING, Proc. U. S. Nat. Mus., vi, 1884, 402 (Los Sábalos, Nicaragua).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 162 (Cacagualito, prov. Santa Marta, Colombia).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 495 (Rio Escondido, Nicaragua; habits; song).

[*Icterus*] *mesomelas* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36, part.

*Icterus salvini* CASSIN, Proc. Ac. Nat. Sci. Phila., Apr., 1867, 51 (Turrialba and San Carlos, Costa Rica; Greytown, Nicaragua; Rio Atrato and Bogota, Colombia; Venezuela; type in Acad. Nat. Sci. Phila.)

*Icterus salvini* LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (San Carlos and Turrialba, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 302 (Costa Rica).—ZELEDON, Cat. Aves de Costa Rica, 1882, 9.

[*Icterus*] *salvini* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 838, in text (crit.).

*Icterus mesomelas salvini* BANGS, Proc. New Engl. Zool. Club, ii, Sept. 20, 1900, 33 (Loma del Leon, Panama R. R.).

*Icterus mesomelas salvini* RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 153, in text.

#### ICTERUS PARISORUM Bonaparte.

##### SCOTT'S ORIOLE.

*Adult male in summer.*—Head, neck, chest, back, and scapulars uni-



*Adult female*.—Above olive-grayish, becoming more yellowish olive on rump and upper tail-coverts, the feathers of pileum, back, and scapulars with darker mesial streaks, sometimes black with merely the margins grayish olive; wings dusky with light grayish edgings, the middle and greater coverts broadly tipped with white, forming two distinct bands; tail yellowish olive with four middle rectrices and terminal portion of the remainder darker, more grayish olive; under parts plain yellowish olive, passing into clear yellow (gamboge or light lemon) on median portion of breast and abdomen. (In those specimens having broad black centers to feathers of pileum, back, etc., the throat more or less spotted or clouded with black; sometimes the whole chin, throat, and chest uniform black.)

*Immature male*.—Similar in coloration to adult females, but larger.

*Young male and female (first plumage)*.—Similar to the lighter-colored adult females, but paler, and with the remiges more broadly margined with whitish.

*Adult male*.—Length (skins), 188–210.8 (199.1); wing, 98.6–106.7 (104.4); tail, 79.2–91.9 (88.4); exposed culmen, 20.8–24.6 (22.9); depth of bill at base, 8.6–9.9 (9.4); tarsus, 22.9–25.4 (23.9); middle toe, 17–19.1 (18).<sup>1</sup>

*Adult female*.—Length (skins), 184.2–203.2 (191.5); wing, 94.5–102.1 (97.8); tail, 81.3–88.4 (84.3); exposed culmen, 20.3–22.9 (21.3); depth of bill at base, 8.1–9.7 (8.9); tarsus, 23.4–24.9 (24.1); middle toe, 16.3–19.6 (17.5).<sup>2</sup>

Southwestern United States, Lower California, and Mexican plateau; north to western Texas (El Paso County; Pecos River), New Mexico (Sandia Mountains, near Santa Fe; Silver City; Fort Bayard), Arizona (Chiricahua and Santa Rita mountains; Tucson), southern Utah (Beaver Dam Mountains), southern Nevada (Charleston, Grapevine, White, and Juniper mountains, and Stillwater), and southern California (San Bernardino, San Diego, Los Angeles, and Inyo counties); south to Vera Cruz (temperate and alpine zones), Puebla (San Bartolo; Tehuacan), Mexico (Tlalpam), and Hidalgo (Pachuca).

<sup>1</sup>Sixteen specimens.

<sup>2</sup>Ten specimens.

Adult males from different localities average as follows:

Locality.	Wing.	Tail.	Culmen, from base.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Ten adult males from Arizona, New Mexico, western Texas, etc .....	104.4	87.6	23.1	9.7	24.1	17.8
Four adult males from Lower California.....	104.6	89.7	22.6	9.7	23.9	18.5
Two adult males from southern Mexico (Tlalpam and Guanaajuato) .....	104.4	88.9	22.4	9.1	23.6	17.8

*Icterus parisorum* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 110 (Mexico; coll. Paris brothers).—SCLATER, Proc. Zool. Soc. Lond., 1858, 303 (La Parada, Oaxaca); 1860, 251 (Mexico); 1864, 175 (valley of Mexico); Cat. Am. Birds, 1862, 132 (n. Mexico; Cape St. Lucas); Ibis, 1883, 365 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 374 (Cape St. Lucas, Lower California; near City of Mexico; Pecos R., Texas; Santa Catarina, Nuevo Leon).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 544; ed. 1860 (Birds N. Am.), atlas, pl. 57, fig. 1; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19, pl. 19, fig. 1 (Santa Catarina, and near Monterey, Nuevo Leon); Cat. N. Am. Birds, 1859, no. 411; Proc. Ac. Nat. Sci. Phila., 1859, 301, 304 (Cape St. Lucas).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 54 (monogr.).—SUMICHRAST, Mem. Bost. Soc., i, 1869, 553 (temperate and alpine regions, Vera Cruz).—COOPER, Orn. Cal., 1870, 276 (Cape St. Lucas to Texas; Fort Mojave, California?).—COUES, Check List, 1873, no. 219.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 188, pl. 35, fig. 7.—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 160 (Arizona s. of Gila R.).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 268.—BREWSTER, Bull. Nutt. Orn. Club, vi, 1881, 69 (Chiricahua Mts., s. Arizona).—BELDING, Proc. U. S. Nat. Mus., v, 1882, 54 (La Paz, Lower California, winter); vi, 1883, 348 (Victoria Mts., Lower California, up to 4,500 ft.).—SCOTT, Auk, ii, 1885, 1-7 (Santa Catalina Mts., Arizona; breeding habits, etc.); iv, 1887, 22 (Pima and Gila counties, Arizona; habits, etc.).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 504.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 150 (San Bartolo, Puebla, Nov.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 463.—MORCOM, Bull. Ridgw. Orn. Club, no. 2, 1887, 47 (Chino Canyon and Coahuilla Valley, San Diego Co., California, Apr.).—NELSON, Auk, vii, 1891, 237 (Sandia Mts., near Santa Fe, New Mexico, July).—BROWNE, Auk, vii, 1891, 238 (San Diego, California, 1 spec., May 16; Silver City, New Mexico).—ANTHONY, Auk, viii, 1892, 364 (s. w. New Mexico, breeding); xi, 1894, 327 (San Diego Co., California; San Quentin, Lower California); xii, 1895, 140 (San Fernando, Lower California, resident).—FISHER, North Am. Fauna, no. 7, 1893, 76 (Agua, Inyo, Calo, and Pan. Mts., s. e. California, Charles



chest; rump, upper tail-coverts, lesser and middle wing-coverts, and under parts of body (except median portion of upper chest) rich orange or orange-yellow;<sup>1</sup> wings (except lesser and middle coverts) black, the greater coverts broadly tipped with white, the remiges more or less edged with same; middle pair of rectrices black, except the concealed basal portion; remainder of tail light orange or orange-yellow, crossed near the base by a broad band of black; maxilla black, mandible pale grayish blue (in life), with tip dusky; iris brown; legs and feet dusky horn color (in dried skins).

*Adult male in winter.*—Similar to the summer male, but scapulars and interscapulars margined with dull orange, orange of rump and upper tail-coverts more or less obscured with olive, and white wing-edgings broader.

*Adult female in summer.*—Pileum, hindneck, back, and scapulars saffron-olive, the feathers with more or less distinct central spots of black or dusky; rump, upper tail-coverts, and tail olive-saffron, brightest (sometimes dull orange) on upper tail-coverts; wings dusky, the middle coverts broadly, the greater coverts more narrowly, tipped with white, the remiges edged with gray (sometimes white on longer primaries); under parts saffron yellow or dull orange-yellow, paler and duller on abdomen, tinged with olive on sides and flanks, the throat usually with more or less of black.<sup>2</sup>

*Adult female in winter.*—Similar to the summer female, but plumage softer and back tinged with gray.

*Immature male.*—Variously intermediate in coloration between the adult female and fully adult male, according to age.

*Young in first autumn and winter.*—Not essentially different from those adult females without black on upper parts or throat.

*Young, first plumage.*—Essentially similar to the lighter colored adult females, but upper parts paler and grayer, without dusky centers to feathers of pileum, back, etc.; under parts dull whitish shading into pale saffron-olive on chest, sides, and flanks; chin grayish white, throat pale olive-yellowish, and white wing-markings somewhat tinged with dull yellowish.

*Adult male.*—Length (skins), 172.7–188 (181.1); wing, 91.4–102.1 (97); tail, 70.6–80 (75.9); exposed culmen, 17.5–19.8 (18.3); depth of bill at base, 9.1–10.7 (9.9); tarsus, 22.9–25.4 (23.9); middle toe, 15.2–16.8 (15.7).<sup>3</sup>

<sup>1</sup> Varying from cadmium yellow to intense orange, or almost flame scarlet, the average hue being cadmium orange.

<sup>2</sup> There is a very great amount of individual variation in the adult female. A majority of specimens show more or less black on the upper parts, some having the head, neck, and back nearly uniform black and the middle rectrices mostly black, thus to be distinguished from males in the second or third year only by dissection.

<sup>3</sup> Twelve specimens.

*Adult female*.—Length (skins), 157.5–170.2 (166.1); wing, 85.1–91.9 (88.9); tail, 66–71.9 (68.6); exposed culmen, 16–18 (17.5) depth of bill at base, 8.4–10.2 (9.4); tarsus, 22.4–24.1 (23.1); middle toe, 14.7–16.5 (15.5).<sup>1</sup>

Eastern temperate North America; breeding from the more southern United States (Texas to the Carolinas), except along the Gulf coast, northward to Nova Scotia, southern New Brunswick, Ontario, and Manitoba (to latitude 55°); west to eastern Assiniboia, Montana, Wyoming, and Colorado, east of the Rocky Mountains; in winter south through eastern Mexico and Central America to Colombia (province of Santa Marta) and Venezuela (Caracas?); accidental in Cuba, at York Factory, and said to have been taken in the Shetland Islands.

[*Coracias*] *galbula* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 108 ("America"; based on *Icterus ex aureo nigroque varius* Catesby, Nat. Hist. Carolina, i, pl. 48).

*Icterus galbula* COUES, Bull. Nutt. Orn. Club, v, Apr., 1880, 98; Check List, 2d ed., 1882, no. 326.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 271; Proc. U. S. Nat. Mus., x, 1887, 580 (Truxillo, Honduras, Sept.); Orn. Illinois, i, 1889, 319.—CHAMBERLAIN, Bull. i, Nat. Hist. Soc. N. B., 1882, 41 (New Brunswick, rare summer resid.); Auk, iv, 1887, 256 (near Halifax, Nova Scotia, Sept.).—OGILBY, Sci. Proc. Roy. Dubl. Soc., iii, 1882, 48 (Navarro Co., Texas, 1 spec., Aug. 30).—HAY, Bull. Nutt. Orn. Club, vii, 1882, 92 (Memphis, Tennessee, and Jackson, Mississippi, summer).—BECKHAM, Journ. Cinc. Soc. N. H., vi, 1883, 143 (Nelson Co., Kentucky, breeding).—NUTTING, Proc. U. S. Nat. Mus., v, 1883, 500 (San José, Costa Rica); vi, 1883, 392 (Ometepe, Nicaragua).—BICKNELL, Auk, ii, 1885, 251 (song).—AGERSBORG, Auk, ii, 1885, 282 (s. e. South Dakota, breeding).—COOKE, Auk, ii, 1885, 58 (migrations in 1884); Bird Migr. Miss. Val., 1888, 170 (dates, etc.); Birds Col., 1897, 95 (rare summer resid. El Paso Co., etc., e. side of mountains); Bull. no. 44, Col. Agric. Col., 1898, 164 (Golden, Colorado).—CORY, Auk, iii, 1886, 219 (West Indian references); Birds W. I., 1889, 109; Cal. W. I. Birds, 1892, 110. *Galbula* = *Ammodramus*.

summer resid.).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 580 (localities in s. and w. Manitoba; habits, etc.).—CHERRIE, Auk, viii, 1892, 250 (San José, Costa Rica, Oct. 5 to Mar. 16); Expl. Zool. Costa Rica, 1893, 30 (Buenos Aires, s. w. Costa Rica).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (Rio Escondido, Nicaragua, Sept. 20 to Feb. 16).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 482, pl. 7, figs. 6–9 (eggs).—BEAL, Yearbook U. S. Dep. Agr. for 1895, 426–430, fig. 111 (food, etc.).—NEHRLING, Our Native Birds, etc., ii, 1896, 286, pl. 30, figs. 1, 2.—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 139 (Santa Marta, Colombia, winter).—ROBBINS, Auk, xvi, 1899, 354 (song).—BEYER, Proc. Louis. Soc. Nat. for 1897–99 (1900), 105 (breeding in East Feliciana parish, Louisiana).—FLEMING, Auk, xviii, 1901, 40 (Port Sydney and Beaumaris, n. Ontario, summer resident).—CARY, Auk, xviii, 1901, 236 (Edgemont, Black Hills, Wyoming, breeding).

[*Icterus*] *galbula* CORY, List Birds W. I., 1885, 13.

[*Icterus*] *galbula* COUES, Key N. Am. Birds, 2d ed., 1884, 408.—RIDGWAY, Man. N. Am. Birds, 1887, 377.

[*Oriolus*] *baltimore* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 162 (based on *Icterus minor* Brisson, ii, Orn., 109; *Icterus ex aureo nigroque varius* Catesby Nat. Hist. Carolina, i, pl. 48).—GMELIN, Syst. Nat., i, pt. i, 1788, 381.—LATHAM, Index Orn., i, 1790, 180.

*Oriolus baltimore* WILSON, Am. Orn., i, 1808, 23, pl. 1, fig. 3; vi, 1812, 88, pl. 53, fig. 4.

*Icterus baltimore* DAUDIN, Traité d'Orn., ii, 1800, 348.—TEMMINCK, Cat. Syst., 1807, 47.—BONAPARTE, Ann. Lyc. N. Y., ii, 1828, 51; Proc. Zool. Soc. Lond., 1837, 116 (Guatemala); Geog. and Comp. List, 1838, 29.—LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 1 (Mexico).—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 152.—SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 284.—AUDUBON, Orn. Biog., i, 1831, 66, pl. 12; v. 1839, 278, pl. 423; Synopsis, 1839, 143; Birds Am., oct. ed., iv, 1842, 37, pl. 217.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 548; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19 (San Antonio, Texas); Cat. N. Am. Birds, 1859, no. 415.—HAYDEN, Rep. U. S. Geol. Surv., 1862, 170 (wooded portions of the Missouri Valley).—SCLATER, Proc. Zool. Soc. Lond., 1864, 175 (Mexico); Ibis, 1883, 354 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 364 (Jalapa, Vera Cruz; British Honduras; Choctum, Cahabon, Coban, San Pedro Martir, Volcan de Fuego, and Escuentla, Guatemala; San Pedro, Honduras; Chontales, Nicaragua; Irazú distr. and Bebedero, Costa Rica; Bugaba and Calobre, Veragua; Lion Hill and Paraiso Station, Panama R. R.; Minca, Colombia; Caracas, Venezuela?).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 331 (Lion Hill, Panama R. R.); viii, 1865, 177? (David, Chiriqui).—BLAKISTON, Ibis, 1862, 7 (Forks of Saskatchewan, June 2).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 353 (Lion Hill).—DRESSER, Ibis, 1865, 493 (Matamoros, Tamaulipas, breeding?; Houston, Texas).—GUNDLACH, Reprt. Fisico-Nat. Cuba, i, 1866, 286; Journ. für Orn., 1874, 127 (Cuba); Orn. Cuba, 1892, 95.—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (Vera Cruz, migrant).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 146 (Cheyenne, Wyoming, Aug.), 150 (e. Colorado, summer), 178 (Kansas; Wyoming; Colorado; crit.).—SNOW, Birds Kansas, 1873, 8 (common); 3d ed., 1875, 8.—RIDGWAY, Bull. Essex Inst., v, 1873, 183 (Colorado); Field and Forest, 1877, 208 (do.).—COUES, Check List, 1873, no. 216; Birds N. W., 1874, 193; Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 604 (Pembina, North Dakota, breeding; crit.).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 59 (San José, Costa Rica, Mar., Apr.).—BREWSTER, Ann. Lyc. N. Y., xi, 1875, 142 (Ritchie Co., West Virginia, breeding); Bull. Nutt. Orn. Club, iii, 1878, 176 (descr. young).—BAIRD, BREWER, and RIDGWAY,

Hist. N. Am. Birds, ii, 1874, 195, pl. 35, fig. 5, iii, 1874, 518 (El Paso Co., Colorado) — McCARLEY, Bull. U. S. Geol. and Geog. Surv. Terr., iii, 1877, 669 (Wolf Creek, n. Texas, breeding). — McCHESNEY, Bull. U. S. Geol. and Geog. Surv., v, 1879, 80 (Fort Sisseton, South Dakota, May 19 to Sept. 1). — MERRILL, Proc. U. S. Nat. Mus., i, 1879, 135 (Fort Brown, Texas<sup>1</sup>). — SALVIN, and GODMAN, Ibis, 1880, 123 (Minca, prov. Santa Marta, Colombia, Feb.).: Biol. Centr.-Am., Aves, i, 1887, 460 — SLADE, Bull. Nutt. Orn. Club, vi, 1881, 181 (food). — ZELEDON, Cat. Aves de Costa Rica, 1882, 10. — SALVIN, Cat. Strickland Coll., 1882, 262 (Guatemala).

[*Icterus*] *baltimore* COLES, Key N. Am. Birds, 1872, 158. — SLATER and SALVIN, Nouv. Av. Noct., 1873, 36.

*I[cterus] baltimore* NELSON, Bull. Essex Inst., viii, 1876, 112 (n. e. Illinois, May 8 to Sept.).

*Yterus baltimore* LEMBEYE, Aves de la Isla de Cuba, 1850, 63, pl. 9, figs. 1, 2.

*Ps[arocolius] baltimore* WAGLER, Syst. Av., 1827, *Psarocolius*, sp. 27.

*Y[phantus] baltimore* VIEILLLOT, Enc. Méth., ii, 1823, 708.

*Yphantus baltimore* VIEILLLOT, Cal. Orn., i, 1824, 124, pl. 87. Woodhouse, Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 79 (Indian Terr., e. Texas). — CASSIN, Proc. Ac. Nat. Sci. Phila., 1848, 90 (Mexico). — HAYMOND, Proc. Ac. Nat. Sci. Phila., 1856, 291 (Franklin Co., Indiana). — BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).

[*Yphantus*] *baltimore* BONAPARTE, Consp. Av., i, 1850, 432.

*H[yphantus] baltimore* CABANIS, Mus. Hen., i, 1851, 183.

*Hyphantus baltimore* GRUNDICH, Journ. fur Orn., 1856, 10 (Cuba). — MOORE, Proc. Zool. Soc. Lond., 1859, 57 (Cays, bet. Belize and Orizaba, British Honduras). — CABANIS, Journ. fur Orn., 1861, 7 (San José, Costa Rica). — CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 62 (monogr.). — LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (San José, Costa Rica). — FRANTZIS, Journ. fur Orn., 1869, 303 (Costa Rica).

*Yphantus baltimorinus* SLATER, Proc. Zool. Soc. Lond., 1856, 142 (Chiriquí).

*Hyphantus baltimorinus* SLATER, Proc. Zool. Soc. Lond., 1857, 205 (San Andres Tuxtla, Vera Cruz), 1859, 57, 365 (Jalapa).

*Icterus baltimorinus* SLATER and SALVIN, Ibis, 1859, 20 (Vera Paz, Guatemala); Proc. Zool. Soc. Lond., 1867, 279 (Blewfields R., Nicaragua), 1870, 836 (San Pedro, Honduras). — SLATER, Cat. Am. Birds, 1862, 130 (Pennsylvania, Jalapa, Vera Cruz). — SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (David, Chiriquí), 1870, 190 (Calobre, Veragua), Ibis, 1872, 317 (Chontales, Nicaragua). — COLES, Proc. Essex Inst., v, 1868, 37, 285 (Massachusetts), Proc. Bost. Soc. N. H., xii, 1868, 117 (South Carolina). — TRIPPE, Proc. Essex Inst., vi, 1871, 117 (Minnesota).

*Icterus baltimorus* WILSON, Am. Orn., vi, 1812, 88, pl. 53, fig. 4 (female). — McILWRAITH, Proc. Essex Inst., v, 1866, 90 (Hamilton, Ontario).

*Oriolus tricolor* MÜLLER, Syst. Nat. Suppl., 1776, 87 (based on *Le Baltimore biturd*, du Canada, Daubenton, Pl. Enl., pl. 506, fig. 2; — adult female).

#### ICTERUS BULLOCKII (Swainson).

##### BULLOCK'S ORIOLE.

*Adult male in summer.* — Greater part of pileum, hindneck, back, scapulars, lores, postocular streak, anterior portion of malar region, chin, and broad stripe down middle of throat, black; rest of head and neck (including a broad superciliary stripe and sometimes the whole

<sup>1</sup> Discredits alleged breeding at Matamoros.

forehead), orange or orange-yellow,<sup>1</sup> the under parts similar, but rather paler or more yellowish orange posteriorly; rump and upper tail-coverts orange or orange-yellow, more or less (often strongly) tinged with olive; lesser wing-coverts partly black, partly (next to bend and anterior border) orange; exposed portion of middle and greater coverts white, forming a large patch; rest of wings, including greater portion of inner webs of greater coverts, black, the secondaries (except at base of five or six outermost) broadly, the primaries more narrowly, edged with white; middle pair of rectrices black, except at base; next pair mostly black; remaining rectrices orange-yellow, with more or less of black or dusky at tips (sometimes also on subbasal portion of inner webs); maxilla black, mandible bluish; iris brown; legs and feet dusky horn color in dried skins.

*Adult male in winter.*—Similar to the summer male, but scapulars and interscapulars margined with grayish, feathers of under parts faintly margined with whitish, and those of rump and upper tail-coverts tipped with light grayish.

*Adult female.*—Pileum and hindneck yellowish olive, becoming grayer posteriorly; back, scapulars, and rump olive-grayish, the back sometimes narrowly or indistinctly streaked with dusky; upper tail-coverts and tail olivaceous saffron yellow, or wax yellow, rather brighter on edges of the rectrices; sides of head (including superciliary stripe), sides of neck, and chest (sometimes most of throat also—more rarely most of under parts) saffron yellowish or dull orange-yellow; chin and median line of throat more whitish, sometimes blotched with black (chin and median line of throat rarely solid black?); rest of under parts dull buffy whitish, the sides and flanks tinged with pale olive-grayish, and breast (sometimes abdomen also) tinged with yellow; anal region and under tail-coverts more yellowish, sometimes distinctly yellow; wings dusky, the middle coverts broadly tipped with white, forming a distinct band, the greater coverts and remiges edged with white or grayish white.

*Immature male (second year).*—Similar to the adult female, but chin and median line of throat solid black, the lores also black, and size slightly larger.

*Young male, first plumage.*—Similar to adult female, but throat entirely yellowish, wing-markings more buffy whitish, and plumage in general more or less suffused with buffy, especially the under parts.

*Young female, first plumage.*—Similar to the young male, but slightly paler.

*Adult male.*—Length (skins), 171.5–193 (180.3); wing, 97–102.4 (99.8); tail, 75.7–81.8 (78.7); exposed culmen, 16.5–20.6 (18.5); depth

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<sup>1</sup> Varying from almost lemon yellow to deeper than cadmium orange, the average hue about the "orange" of my "Nomenclature of Colors."

of bill at base, 9.1–10.2 (9.9); tarsus, 24.1–25.4 (24.9); middle toe, 15.7–17.8 (16.3).<sup>1</sup>

*Adult female*.—Length (skins), 167.6–190.5 (177); wing, 89.4–98.3 (93.7); tail, 69.3–79.2 (74.4); exposed culmen, 17–19.8 (18.3); depth of bill at base, 8.6–9.7 (9.1); tarsus, 23.4–25.4 (24.6); middle toe, 15.5–17.8 (16.3).<sup>2</sup>

Western United States and British provinces and plateau of Mexico; north to southern British Columbia, southern Alberta, and southern Assiniboia; east to eastern border of the Great Plains in middle portions of South Dakota, Nebraska, Kansas (Manhattan), Indian Territory, and Texas, more sparingly to eastern portion of the same States; breeding south at least to States of Sonora and Chihuahua, northern Mexico; in winter south to States of Colima (Manzanillo), Mexico (Tlalpam, valley of Mexico), Puebla (Huehuetlan, Huachimango), and Durango (Chacala, Papasquiario). Accidental in Maine (Sorrento, Hancock County, November, 1889).

*Xanthornus bullockii* SWAINSON, Philos. Mag., new ser., i, 1827, 436 (tableland of Mexico).

*Agelaius bullockii* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 176.

*Icterus bullockii* BONAPARTE, Geog. and Comp. List, 1838, 29.—AUDUBON, Orn. Biog., v, 1839, 9, pls. 388, 433; Synopsis, 1839, 143; Birds Am., oct. ed., iv, 1842, 43, pl. 218.—NEWBERRY, Rep. Pacific R. R. Surv., vi, 1857, 87 (Sacramento Valley, California).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 549; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 20 (Guadalupe Cañon and Eagle Pass, Texas); Cat. N. Am. Birds, 1859, no. 416.—XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 192 (Fort Tejon, California).—HENRY, Proc. Ac. Nat. Sci. Phila., 1859, 107 (New Mexico).—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 209 (Puget Sound, etc.).—SCLATER, Cat. Am. Birds, 1862, 130 (California; n. Mexico).—LORD, Proc. Roy. Art. Inst., iv, 1864, 121 (British Columbia).—COOPER, Proc. Ac. Nat. Sci. Phila., 1866, 91

Birds, ii, 1874, pl. 34, fig. 7.—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 65 (Denver, Colorado; measurements).—SNOW, Birds Kansas, 3d ed., 1875, 8 (summer resid.).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 150 (Huehuetlan, Puebla, Jan.).—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 47 (interior British Columbia).

*Ict[erus] bullockii* MAXIMILIAN, Journ. für Orn., 1858, 259 (descriptions, etc.).

[*Icterus bullockii*] COUES, Am. Nat., v, 1871, 678–682 (biography).

*Icterus bullocki* SCLATER, Ibis, 1883, 354 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 365.—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas, May to Aug.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1869, 362 (valley of Mexico); Exotic Orn., 1869, 188.—SNOW, Birds Kansas, 1873, 8 (Lawrence, e. Kansas; 5 spec., May, June, 1871).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 199, pl. 34, fig. 3.—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 320 (Utah; Colorado; Arizona; habits, etc.).—RIDGWAY, Orn. 40th Parallel, 1877, 508 (Sacramento, California; localities in Nevada and Utah; habits, etc.); Nom. N. Am. Birds, 1881, no. 272.—MCCAULEY, Bull. U. S. Geol. and Geog. Surv. Terr., iii, 1877, 669 (Wolf Creek, n. Texas; rare).—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 25 (Hidalgo, Texas, breeding; descr. nest and eggs); v, 1879, 397 (Lometa, Texas, breeding).—MERRILL, Proc. U. S. Nat. Mus., i, 1879, 135 (Fort Brown, Texas, breeding).—COUES, Check List, 2d ed., 1882, no. 327.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 508.—AGERSBORG, Auk, ii, 1885, 282 (s. e. South Dakota, breeding).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, 1, 1887, 462.—HANCOCK, Bull. Ridgw. Orn. Club, no. 2, 1887, 18 (Corpus Christi, Texas, breeding).—COOKE, Bird Migr. Miss. Val., 1888, 171 (s. e. South Dakota, breeding; Manhattan, e. Kansas; etc.; dates).—BREWSTER, Auk, v, 1890, 92 (near Bangor,<sup>1</sup> Maine, 1 spec., Nov., 1889).—CHAPMAN, Bull. Am. Mus. N. A., iii, 1890, 143 (Ashcroft, British Columbia).—FANNIN, Check List Birds Brit. Col., 1891, 33 (e. side Cascades; rare sum. resid.).—GOSS, Birds Kansas, 1891, 405 (common in w. Kansas; e. to Manhattan).—RHODES, Proc. Ac. Nat. Sci. Phila., 1892, 109 (Corpus Christi, Texas, breeding).—ATTWATER, Auk, ix, 1892, 238 (San Antonio, Texas, summer resid.).—SINGLEY, Rep. Geol. Surv. Tex., 1894, 372 (Hidalgo).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 486, pl. 7, figs. 10–13 (eggs).—NEHRLING, Our Native Birds, etc., ii, 1896, 293, pl. 31, fig. 1.—KNIGHT, Bull. no. 3, Univ. Maine, 1897, 88 (Sorrento, Hancock Co., Maine, 1 spec., Nov., 1889).—BROOKS, Auk, xvii, 1900, 106 (British Columbia, abt. on e. side of Cascade range; Chilliwack on w. side).—CARROLL, Auk, xvii, 1901, 345 (Refugio Co., Texas, breeding).—BRUNER, Proc. Neb. Orn. Un., sec. ann. meet., 1901, 54 (Ft. Robinson and Sioux Co., w. Nebraska, breeding).—CRAWFORD, Proc. Neb. Orn. Un., sec. ann. meet., 1901, 77 (Sioux Co., w. Nebraska, May).—CARY, Auk, xviii, 1901, 236 (Edgemont, Black Hills, Wyoming, breeding).

[*Yphantes*] *bullockii* BONAPARTE, Consp. Av., i, 1850, 432.

*Yphantes bullockii* HEERMANN, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 52 (Sacramento Valley, California; descr. notes and nests and eggs).—DUGÈS, La Naturelleza, i, 1870, 139 (Mexico).

*Hyphantes bullockii* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 62.

*Icterus (Hyphantes) bullockii* MERRIAM, Ann. Rep. U. S. Geol. Surv., 1872, 685 (Utah; Idaho).

<sup>1</sup> Locality erroneous; should be Sorrento, Hancock County; see Knight, Bull. no. 3, Univ. Maine, 1897, 88.



[*Icterus bullocki*] var. *bullocki* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 184.

[*Icterus*] *bullocki* SCIATER and SALVIN, Nom. Av. Neotr., 1873, 36.

[*Icterus*] *bullocki* COLES, Key N. Am. Birds, 2d ed., 1884, 409.—RIDGWAY, Man. N. Am. Birds, 1887, 378.

*Pseudocolaptes auricollis* MAXIMILIAN, Reise Nordam., i, 1839, 367 (Fort Pierre, South Dakota, type in coll. Am. Mus. Nat. Hist., New York City).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 332 (Missouri R.).

### ICTERUS ABEILLEI (Lesson).

#### ABEILLE'S ORIOLE.

Similar to *I. bullockii*, but adult male with rump, upper tail-coverts, sides, flanks, auricular region, and sides of neck black; adult female and immature male darker and grayer than those of *I. bullockii*, especially on sides of head.

*Adult male*.—Above uniform deep black, from forehead to upper tail-coverts, inclusive; lores, auricular region, anterior portion of malar region, chin and median portion of throat, sides of neck, sides, and flanks uniform black; rest of under parts, including malar region (except extreme anterior portion), and under wing-coverts yellow, more or less inclining to orange anteriorly; a more or less distinct supraloral line of orange-yellow; wings black, relieved by a large white patch covering middle and greater coverts (inner webs of the latter black) and broad white edgings to innermost secondaries, the longer primaries more narrowly edged with white or pale gray; tail yellow, the middle pair of rectrices mostly black and the rest with more or less of black on terminal portion; maxilla blackish, mandible bluish with dusky tip; legs and feet (in dried skins) dusky horn color.

*Adult female*.—Above gray, tinged with olive-yellowish on the head, the feathers of the back darker centrally; an indistinct dusky median stripe on chin and throat; sides of throat, malar region, and chest yellowish; sides, flanks, and under tail-coverts grayish, the latter tinged with yellow; abdomen and median portion of the breast dull whitish; wings dusky, the remiges and greater coverts edged with light gray, the latter (except the innermost) and middle coverts broadly tipped with white; tail yellowish olive.

*Immature male*.—Similar to adult female, but yellow of chest, etc., brighter, and black throat-stripe usually more distinct.

*Adult male*.—Length (skins), 177.8-188 (181.9); wing, 102.9-106.7 (104.6); tail, 80-86.4 (83.6); exposed culmen, 17.3-18.8 (17.8); depth of bill at base, 8.6-10.2 (9.4); tarsus, 23.1-25.4 (24.1); middle toe, 15.5-16.5 (16).<sup>1</sup>

*Adult female*.—Length (skin), 175.3; wing, 96.5; tail, 79.2; exposed culmen, 17.8; depth of bill at base, 8.9; tarsus, 25.1; middle toe, 15.2.<sup>2</sup>

<sup>1</sup> Five specimens.

<sup>2</sup> One specimen.



Southern portion of Mexican plateau, in States of San Luis Potosi (Jesus Maria), Puebla (Chalchicomula), Mexico (Tlalpam, valley of Mexico), Morelos (Huitzilac), Jalisco (Hacienda el Molina), Guanajuato (Celaya), and Vera Cruz (Orizaba).

(?)[*Oriolus*] *costotoll* GMELIN, Syst. Nat., i, pt. i, 1788, 385 ("Nova Hispania"; based on *Icterus novæ hispaniæ* Brisson, Orn., ii, p. 95; *Xochilol* et *Costotoll* Buffon, Hist. Nat. Ois., iii, p. 210).

*Ps[arocolius]* *coztotoll* WAGLER, Isis, 1829, 757.

[*Yphantes*] *coztotoll* BONAPARTE, Consp. Av., i, 1850, 432 (Mexico).

*H[yphantes]* *costotoll* CABANIS, Mus. Hein., i, 1851, 183, footnote.

*Xanthornus abeillei* LESSON, Rev. Zool., 1839, 101 (Mexico; coll. Abeillé).

*Icterus abeillii* SCLATER, Proc. Zool. Soc. Lond., 1860, 252 (Orizaba, Vera Cruz); 1864, 175 (valley of Mexico); Cat. Am. Birds, 1862, 130 (Mexico); Ibis, 1883, 354 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 366 (City of Mexico; "North Mexico").—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1869, 362 (City of Mexico); Exotic Orn., pt. i, 1869, 187, pl. 94.—DUGÈS, La Nature, i, 1868, 139 (Guanajuato).—SALVIN, Cat. Strickland Coll., 1882, 262 (Mexico).

*Icterus abeillæi* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 462.

[*Icterus*] *abeillæi* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 36.

*Icterus abeillei* JOUY, Proc. U. S. Nat. Mus., xvi, 1894, 781 (Hacienda el Molina, Jalisco).

[*Icterus*] *abeillei* RIDGWAY, Man. N. Am. Birds, 1887, 378.

[*Pendulinus*] *abeillii* BONAPARTE, Consp. Av., i, 1850, 433.

*Hyphantes abeillei* CASSIN, Proc. Ac. Nat. Sci. Phila., 1867, 62 (monogr.).

[*Icterus bullocki*] var. *abeillei* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 184 (diagnosis).

*Icterus bullocki*, var. *abeillei* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 184, footnote (references).

#### Genus AGELAIUS Vieillot.

*Agelaius* VIEILLIOT, Analyse, 1816, 33. (Type, *Oriolus phœniceus* Linnæus.)

*Agelæus* (emendation) CABANIS, Mus. Hein., i, Sept., 1851, 188.

*Agelæus* (emendation) SCLATER, Proc. Zool. Soc. Lond., 1857, 127.

*Agelasticus*<sup>1</sup> CABANIS, Mus. Hein., i, Sept., 1851, 188. (Type, *Turdus thilius* Molina.)

*Thilius* BONAPARTE, Compt. Rend., xxxvi, 1853, 833. (Type, *Turdus thilius* Molina.)

*Melanophantes* CASSIN, Proc. Ac. Nat. Sci. Phila., xix, Apr., 1867, 63. (Type, *Icterus xanthornus* Sclater.)

(?) *Chrysomus* (not *Chrysoma* RISSO, 1826) SWAINSON, Classif. Birds, ii, 1837, 274. (Type, *Oriolus icterocephalus* Linnæus.)

(?) *Xanthosomus*<sup>2</sup> CABANIS, Mus. Hein., i, Sept., 1851, 189. (Type, *Oriolus icterocephalus* Linnæus.)

(?) *Erythropsar* CASSIN, Proc. Ac. Nat. Sci. [Phila., xviii, Mar., 1866, 17. (Type, *Agelaius frontalis* Vieillot.)

Small or medium-sized semiterrestrial paludicoline Icteridæ with bill shorter than head, conical or cuneate, compressed; rather long and

<sup>1</sup> "Von ἀγελασπινος, gesellig, in Heerden lebend."

<sup>2</sup> "Von ξανθός, gelb, und σῶμα, Leib. Körper."

pointed wing; tail three-fourths to nearly six-sevenths as long as wing, more or less rounded; adult males black with red, orange, yellow, or tawny lesser wing-coverts;<sup>1</sup> adult females much smaller and conspicuously streaked.<sup>2</sup>

Bill shorter than head, elongate-conical or cuneate, compressed, with straight or nearly straight outlines, its basal depth between one-half and one-third the length of culmen, its basal width much less; culmen straight or nearly so, usually more or less depressed in middle portion and elevated and arched basally, more or less flattened, especially the mesorhinal portion, ending posteriorly in an obtuse point; maxillary tomium straight or nearly so, usually faintly convex in middle, the rictal portion strongly deflexed; mandibular tomium straight to near base, when strongly deflexed, with a gradual curve, the subbasal portion sometimes (in South American species) slightly arched; gonys straight or nearly so, shorter than maxilla from nostril. Nostril small, oval or roundish (sometimes more or less pointed anteriorly), with a narrow but distinct superior operculum, posteriorly in contact with feathering of frontal antise. Wing moderate or rather long (less than four to nearly five times as long as culmen, three and a half to nearly four and a half times as long as tarsus), the tip moderately produced (slightly less to much more than length of culmen), rounded or truncate; outermost (ninth) primary intermediate between sixth and fifth, equal to fifth, slightly shorter than fifth, or (in *A. cyanopus*), shorter than fourth; eighth, seventh, or sixth primaries longest, or these three equal in length; inner webs of two or three outer primaries very faintly sinuated beyond middle. Tail three-fourths to nearly seven-eighths as long as wing, more or less rounded (sometimes nearly even), the rectrices broadest near ends, the inner webs of lateral pair

Lesser Antilles, and Galapagos Archipelago. (About twelve species, not including subspecies.)

The above diagnosis and description of external structural characters are drawn up from the type species and others which are evidently congeneric, besides two South American species (*A. thilius* and *A. cyanopus*),<sup>1</sup> which, though aberrant, seem scarcely different enough to warrant generic separation. In addition to these typical or nearly typical species of *Agelaius*, Dr. Sclater includes<sup>2</sup> six others. Three of these coincide so closely with the typical *Agelaii* in structural details that, notwithstanding great difference in their style of coloration, I am for the present compelled to refer them to the same genus, though of the opinion that differences may be found which will warrant their generic separation. One of these species (*Oriolus icterocephalus* Linnaeus) is the type of *Xanthosomus* Cabanis. This species differs from the typical *Agelaii* in having the culmen less elevated basally, the mesorhinium less flattened, the wing-tip shorter, the toes and claws more slender, and the plumage of the adult male is uniform deep black, with the whole head, neck, and chest yellow. The other two species are closely allied, and one of them (*Agelaius ruficapillus* Vieillot) is the type of *Erythropсар* Cassin. This has the bill quite as in typical *Agelaius*, but the feet are much more slender, with the claws relatively longer, and the coloration black, with crown and throat chestnut. *A. forbesi* Sclater I have not seen, but believe that it should be expunged from this genus, since it is said to have the "feathers of the head and neck lanceolate and with shining shafts," the "mesorhinium much flattened," and the base of the mandible denuded and somewhat tuberculate—characters which, quite apart from others that may exist, are certainly not to be found in any species of true *Agelaius*. *A. imthurmi* Sclater is so exceedingly unlike any species of *Agelaius* that it is difficult to understand why it should ever have been placed in that genus. It seems to me far more nearly related to *Quiscalus*, and I have accordingly made it the type of a new genus, *Pseudagelæus*.<sup>3</sup> The remaining species, the *Oriolus flavus* of Gmelin, has usually been placed in *Xanthosomus* by those who accord the latter generic rank; but it is by no means congeneric with the type of *Xanthosomus*, nor apparently with any other species, and having been overlooked by Dr. Cabanis, while Mr. Cassin, in his generous distribution of subgeneric names seems to have forgotten it, I have felt compelled to make a new one (*Xanthopsar*)<sup>3</sup> for this species.

<sup>1</sup>The first-named of these is the type of Cabanis's genus *Agelasticus* (Mus. Hein., i, September, 1851, 188.)

<sup>2</sup>Cat. Birds Brit. Mus., xi, 1886, 339–348.

<sup>3</sup>Proc. Biol. Soc. Wash., iii, Apr. 15, 1901, 155.

## KEY TO THE SPECIES AND SUBSPECIES OF AGELAIUS.

- a. General color uniform black.
- b. Lesser wing-coverts red, orange, yellow, or tawny.
- c. Lesser wing-coverts red or orange.
  - d. Plumage with a strong bluish green gloss; lesser wing-coverts dull crimson; middle coverts white or (in winter only) light brownish buff. (California and Oregon, west of Sierra Nevada and Cascade mountains.)  
*Agelaius tricolor*, adult male (p. 324)
  - dd. Plumage without distinct gloss; lesser wing-coverts scarlet, orange-red, or orange; middle coverts buff, ochraceous, tawny, or partly (sometimes wholly) black.
  - e. Middle wing-coverts mostly black; or else wing 130 or more. (*Agelaius gubernator*.)
    - f. Lesser wing-coverts usually rich vermilion or scarlet; middle coverts mostly black; culmen, from base, averaging not more than 21.8.
    - g. Larger, with relatively shorter tail, bill, and toes (wing averaging 136.9, tail 93.2, culmen 21.3, depth of bill at base 12.7, tarsus 32.5, middle toe 22). (Southwestern portion of Mexican plateau.)  
*Agelaius gubernator gubernator*, adult male (p. 326)
    - gg. Smaller, with relatively longer tail, bill, and toes (wing averaging 125.2, tail 91.9, culmen, from base, 21.8, depth of bill at base 11.4, tarsus 30, middle toe 21.8). (California and western Oregon.)  
*Agelaius gubernator californicus*, adult male (p. 327)
    - ff. Lesser wing-coverts usually orange or orange-red; middle coverts mostly buff; culmen, from base, averaging 23.1. (Southeastern portion of Mexican plateau.)...*Agelaius gubernator grandis*, adult male (p. 329)
  - ee. Middle wing-coverts entirely buff, ochraceous or tawny, or if partly tipped with black the wing less than 130 (usually less than 127).
  - f. Larger, the wing averaging more than 120.6.
    - g. Larger (wing averaging 126, culmen, from base, averaging 23.3, depth of bill at base averaging 13.5). (Interior of British America; Rocky Mountains, Great Plains, etc., during migration.)

- j. Bill longer and more slender (culmen, from base, averaging 24.4, depth of bill at base 11.7). (Northwest coast district, in Washington and British Columbia; occasionally south to California in winter.)  
**Agelaius phoeniceus caurinus**, adult male (p. 341)
- jj. Bill shorter and stouter (culmen, from base, averaging 23.1, depth of bill at base 12.2). (West slope of Rocky Mountains to California, northern Lower California, and Western Texas)....**Agelaius phoeniceus neutralis**, adult male (p. 339)
- ff. Smaller, the wing averaging not more than 114.3.
- g. Wing averaging more than 111.8.
- h. Wing averaging less than 113, culmen averaging not more than 24.1.
- i. Wing averaging 112.5, tail 87.9, culmen 24.6, depth of bill at base 11.4, tarsus 28.5, middle toe 20.3. (Florida and along Gulf coast to Galveston, Texas.)  
**Agelaius phoeniceus floridanus**, adult male (p. 333)
- ii. Wing averaging 112, tail 82.8, culmen 23.1, depth of bill at base 11.4, tarsus 27.9, middle toe 20.1. (Southern Texas, lowlands of eastern Mexico, Yucatan, and south to Nicaragua.)  
**Agelaius phoeniceus richmondi**, adult male (p. 335)
- hh. Wing averaging 114.3, culmen averaging 25.9. (Bahama islands, Florida Keys, and southeast coast of Florida.)  
**Agelaius phoeniceus bryanti**, adult male (p. 334)
- gg. Wing averaging 108.2. (Cuba, including Isle of Pines.)  
**Agelaius assimilis**, adult male (p. 342)
- cc. Lesser wing-coverts neither red nor orange.
- d. Lesser wing-coverts cinnamon-rufous or tawny. (Cuba.)  
**Agelaius humeralis**, adult male and female (p. 343)
- dd. Lesser wing-coverts lemon-yellow. (Porto Rico.)  
**Agelaius xanthomus**, adult male and female (p. 344)
- bb. Lesser wing-coverts black, like rest of plumage.  
**Agelaius assimilis**, adult female (p. 342)
- aa. General color not black, but more or less streaked, at least on throat.
- b. Under parts of body unicolored, or with distinct streaks only on anterior half.
- c. Color more grayish, the plumage with a soft, silky gloss.  
**Agelaius tricolor**, adult female (pp. 324, 325)
- cc. Color more sooty, the plumage without distinct, if any, gloss.
- d. Larger (wing averaging more than 107.9).
- e. Less streaked below, the whole under surface of body usually uniform dusky or sooty; wing averaging 108.4, tail 71.6, culmen 18.3, depth of bill at base 10.4, tarsus 27.9, middle toe 19.3.  
**Agelaius gubernator gubernator**, adult female (p. 327)
- ee. More streaked beneath, the breast always (?) distinctly streaked; wing averaging 110.5, tail 77.2, culmen 19.6, depth of bill at base 11.7, tarsus 28.2, middle toe 20.3.  
**Agelaius gubernator grandis**, adult female (p. 329)
- dd. Smaller (wing averaging 103.9).  
**Agelaius gubernator californicus**, adult female (p. 328)
- bb. Under parts of body conspicuously streaked throughout.
- c. Darker, the under parts with dusky and whitish streaks about equally broad or the former broader, the upper parts with darker colors predominating.
- d. Larger, the wing averaging more than 95.2, tail averaging 72.4 or more.

e. Darker, with streaks of under parts more blackish; upper parts with much of rusty in winter.

f. Larger, with longer bill (wing averaging 103.1, tail 77.5, culmen 20.8, tarsus 26.9); streaks on under parts more blackish, and upper parts with more rusty in winter.

*Agelaius phoeniceus caurinus*, adult female (p. 341)

ff. Smaller, with shorter bill (wing averaging 98.3, tail 74.2, culmen 19.3, tarsus 25.9); streaks on under parts less blackish, and upper parts with less rusty in winter.

*Agelaius phoeniceus phoeniceus*, adult female (p. 331)

ee. Paler, with streaks of under parts more grayish; upper parts with little if any rusty in winter.

*Agelaius phoeniceus neutralis*, adult female (p. 339)

dd. Smaller, the wing averaging 93.7, tail averaging 71.1. (Coloration as in *A. p. phoeniceus*, but averaging slightly darker.)

*Agelaius phoeniceus floridanus*, adult female (p. 333)

cc. Paler, the under parts with dusky or grayish streaks usually narrower than the whitish ones, the upper parts with paler colors predominating.

d. Larger, with shorter and thicker bill (wing averaging 105.5, tail 78.1, culmen 19.1, depth of bill at base 11.8).

*Agelaius phoeniceus fortis*, adult female (p. 338)

dd. Smaller, with longer and more slender bill (wing averaging not more than 102.4, tail not more than 73.4, culmen 19.3 or more, depth of bill at base not more than 10.2).

e. Larger, except bill (wing averaging 102.4, tail 73.4, culmen 19.8, depth of bill at base 9.9, tarsus 26.7, middle toe 19).

*Agelaius phoeniceus sonoriensis*, adult female (p. 337)

ee. Smaller (wing averaging not more than 92.7, tail 68.6, tarsus not more than 25.6).

f. Under parts with ground color duller white, the dusky streaks broader; white terminal margins to wing-coverts narrower.

*Agelaius phoeniceus richmondi*, adult female (p. 335)

ff. Under parts with ground color purer white, the dusky streaks narrower; white terminal margins to wing-coverts broader.

however, not forming a stripe; scapulars and interscapulars with light brownish gray edgings to inner webs; lesser wing-coverts broadly margined with brownish gray (sometimes tinged with brownish red toward junction of wing with body); middle coverts abruptly margined with white or white and gray; greater coverts, secondaries, innermost primaries, and rectrices narrowly edged with light brownish gray; outermost primaries narrowly edged with white; a distinct superciliary stripe and a malar stripe of pale brownish gray or dull buffy whitish, narrowly streaked with dusky; space between these lighter-colored stripes nearly uniform dark brownish gray; chin and throat pale grayish buffy or dull whitish, the latter streaked with dusky, especially along sides; chest streaked with dusky and pale grayish buffy in about equal amount; rest of under parts dusky, with more or less distinct paler margins to feathers, these most distinct on breast; bill blackish, the mandible more or less paler, sometimes horn color; legs and feet brownish black; iris brown.

*Adult female in winter*.—Similar to the summer female, but plumage softer, more glossy, and of a more grayish cast, with pale (light buffy grayish) margins to feathers of lower parts much broader.

*Immature female (in first winter)*.—Similar to the adult female in winter, but much browner, the pileum, hindneck, and back strongly tinged or washed with brown, and the superciliary and malar stripes, lighter streaks of anterior under parts, and margins of wing-coverts brownish buffy.

*Young (sexes alike)*.—Much like summer female, but general color browner and under parts of body narrowly streaked with dull grayish white; middle and greater wing-coverts margined terminally with dull buffy whitish, producing two narrow bands; tertials narrowly margined with dull buffy whitish.

*Adult male*.—Length (skins), 203.2–229.9 (211.1); wing, 117.6–123.7 (121.2); tail, 84.3–95.3 (88.1); culmen, 22.1–24.1 (23.4); depth of bill at base, 10.4–11.7 (11.2); tarsus, 28.7–30.7 (29.7); middle toe, 21.3–23.1 (22.4).<sup>1</sup>

*Adult female*.—Length (skins), 180.3–199.4 (188.2); wing, 104.4–109.7 (106.7); tail, 74.2–80.3 (75.4); culmen, from base, 19.8–21.1 (20.1); depth of bill at base, 9.7–10.7 (10.2); tarsus, 25.4–26.9 (26.4); middle toe, 19.1–20.3 (19.8).<sup>2</sup>

Valleys of California, northern Lower California (San Rafael Valley, etc.), and southwestern Oregon (Klamath Lakes; Wapeta Lake and Beaverton, Washington County).

*Icterus tricolor* "Nuttall" AUDUBON, Orn. Biog., v, 1839, 1, pl. 388, fig. 1 (Santa Barbara, California;<sup>3</sup> coll. U. S. Nat. Mus.).—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 186.

<sup>1</sup> Nine specimens.

<sup>2</sup> Ten specimens.

<sup>3</sup> According to label of type, from Audubon's collection.

- Agelaius tricolor* BONAPARTE, Geog. and Comp. List, 1838, 29.—AUDUBON, Synopsis, 1839, 141; Birds Am., oct. ed., iv, 1842, 27, pl. 214.—GAMBEL, Journ. Ac. Nat. Sci. Phila., 2d ser., i, 1847, 48 (California; notes); Proc. Ac. Nat. Sci. Phila., 1847, 204 (do.)—HEERMANN, Journ. Ac. Nat. Sci. Phila., 2d ser., ii, 1852, 268 (near Shasta City, n. California; habits); Rep. Pacific R. R. Surv., x, pt. iv, 1859, 53 (Suisun Valley, n. California; habits; descr. nest and eggs).—WOODHOUSE, Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 80 (San José Valley, California).—NEWBERRY, Rep. Pacific R. R. Surv., vi, 1857, 86 (Klamath Basin, Oregon).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 530; Cat. N. Am. Birds, 1859, no. 403; (?) Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 18 (Colorado R., California, Dec.).—XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 192 (Fort Tejon, California).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 10 (monogr.).—COOPER, Orn. Cal., 1870, 265.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 165, pl. 33, figs. 5, 6, 7.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 500.—ANTHONY, Auk, iii, 1886, 167 (Beaverton and Wapita Lake, Washington Co., w. Oregon).—MORCOM, Bull. Ridgw. Orn. Club, no. 2, 1887, 47 (San Geronimo, San Bernardino Co., s. California, winter and May 26).—EMERSON, Bull. Cal. Ac. Sci., no. 7, 1887, 428 (Poway, San Diego Co., s. California).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 456, pl. 6, figs. 18, 19 (eggs).—NEHRLING, Our Native Birds, etc., ii, 1896, 257.—GRINNELL, Pub. ii, Pasadena Ac. Sci., 1898, 33 (Los Angeles Co., California, resident).—RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 154 (range).—BARLOW, Condor, iii, 1901, 168 (Lake Tahoe, California, breeding).
- Agelaius tricolor* COOPER, Proc. Cal. Ac. Sci., 1875, 9 (Saticoy, California; descr. eggs).—RIDGWAY, Orn. 40th Parallel, 1877, 505 (Sacramento, California); Nom. N. Am. Birds, 1881, no. 262.—COUES, Check List, 2d ed., 1882, no. 318.—HENSCHAW, Rep. Orn. Spec. Wheeler's Surv., 1876, 249 (Santa Clara Valley and Santa Barbara, California; habits).—BELDING, Proc. U. S. Nat. Mus., i, 1879, 421 (Stockton, California, Mar. 22 and Apr. 5).—SCLATER, Ibis, 1884, 11 (monogr.); Cat. Birds Brit. Mus., xi, 1896, 342 (Santa Barbara and Stockton, California).
- Agelaius tricolor* BONAPARTE, Conspect. Av., i, 1850, 430.—RIDGWAY, Man. N. Am.



*Immature male*.—Lesser wing-coverts partly black, the red portions often of an orange-tawny or ochraceous-rufous hue.

*Adult female*.—Nearly or quite uniform dark sooty brown, the chin and throat streaked (usually broadly) with whitish, buff, or pinkish, the superciliary region narrowly streaked with the same, producing a more or less distinct stripe.

*Adult male*.—Length (skins), 208.3–233.7 (218.9); wing, 124.5–144.3 (136.9); tail, 85.9–101.6 (93.2); culmen, from base, 20.3–22.9 (21.3); depth of bill at base, 11.4–13.7 (12.7); tarsus, 30–34.3 (32.5); middle toe, 19.8–22.9 (21.1).<sup>1</sup>

*Adult female*.—Length (skins), 167.6–191.5 (176); wing, 104.1–116.3 (108.5); tail, 64.8–80 (71.6); culmen, from base, 17.3–19.3 (18.3); depth of bill at base, 10.2–10.7 (10.4); tarsus, 26.4–29.2 (27.9); middle toe, 18.5–21.6 (19.3).<sup>2</sup>

Southwestern portion of Mexican plateau, in States of Durango (Carceria; Ciudad Durango), Zacatecas (Monte Escobedo), Jalisco (Lagos; Lake Chapala; La Barca; Tonila), Guanajuato, Michoacan (Patzcuaro), and Mexico (valley of Mexico?).

*Ps[arocolius] gubernator* WAGLER, Isis, iv, 1832, 281 (Mexico).

*Agelaius gubernator* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 110 (Mexico).—

(?) GAMBEL, Proc. Ac. Nat. Sci. Phila., 1847, 204, part (w. Mexico).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 11, part (monogr.)—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 499, part.—STONE, Proc. Ac. Nat. Sci. Phila., 1890, 218 (Lake Patzcuaro, Michoacan).

(?) *Agelæus gubernator* SCLATER, Proc. Zool. Soc. Lond., 1864, 175 (valley of Mexico).

*Agelæus gubernator* SCLATER, Ibis, 1884 10; part (Mexico); Cat. Birds Brit. Mus., xi, 1886, 341, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 454, part (valley of Mexico).

*A[gelæus] p[hœniceus] gubernator* COUES, Key N. Am. Birds, 2d ed., 1884, 404, part.

*Agelaius gubernator gubernator* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 154 (geog. range).

[*Agelaius*] *gubernator* BONAPARTE, Consp. Av., i, 1850, 430 (Mexico).

[*Agelæus*] *gubernator* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37, part.

*A[gelaius] gubernator* RIDGWAY, Man. N. Am. Birds, 1887, 370, part.

*Agelaius phœniceus*, var. *gubernator* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 163, part.

#### AGELAIUS GUBERNATOR CALIFORNICUS Nelson.

##### CALIFORNIAN BICOLORED BLACKBIRD.

Similar to *A. g. gubernator*, but wing decidedly shorter, bill longer and more slender, tarsus shorter, and middle toe longer; adult female more or less streaked above, at least on pileum and back.

*Adult male*.—Length (skins), 198.1–218.4 (212.1); wing, 118.4–129.3 (125.2); tail, 81.3–96 (91.9); culmen, from base, 19.8–23.1 (21.8); depth of bill at base, 10.7–12.2 (11.4); tarsus, 28.2–31 (30); middle toe, 20.8–22.4 (21.8).<sup>3</sup>

<sup>1</sup> Seventeen specimens.

<sup>2</sup> Seven specimens.

<sup>3</sup> Ten specimens.

*Adult female*.—Length (skins), 175.3–190.5 (183.1); wing, 100.8–107.4 (103.9); tail, 68.1–76.7 (72.1); culmen, from base, 18.5–19.8 (18.8); depth of bill at base, 9.7–10.2 (9.9); tarsus, 25.7–27.9 (26.7); middle toe, 18.8–20.1 (19.3).<sup>1</sup>

Northern and central coast district of California (Mendocino, Sonoma, Marin, San Francisco, San Joaquin, Santa Clara and San Benito counties) and northward to coast of Washington (Cape Disappointment); migrating or straggling eastward to Shasta, Yuba, and Plumas counties, southward to Los Angeles and Riverside counties.

*Agelaius gubernator* (not *Psarocolius gubernator* Wagler) BONAPARTE, Geog. and Comp. List, 1838, 30.—AUDUBON, Synopsis, 1839, 141; Birds Am., oct. ed., iv, 1842, 29, pl. 215.—GAMBEL, Proc. Ac. Nat. Sci., Phila., 1847, 204, part (California).—WOODHOUSE, Rep. Sitgreaves' Expl. Zuffi and Col. R., 1853, 80 (California).—NEWBERRY, Rep. Pacific R. R. Surv., vi, 1857, 86 (San Francisco and Sacramento Valley, California).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 530 (Columbia R.; Petaluma, San Francisco, Santa Clara, Sacramento Valley, and Cocomongo Ranch, California); Cat. N. Am. Birds, 1859, no. 402.—HEERMANN, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 53 (California; desc. nest and eggs).—KENNERLY, Rep. Pacific R. R. Surv., x, 1859, pt. iv, 1859, 31, part (Cocomongo Ranch, s. California).—CASSIN, Proc. Ac. Nat. Sci., Phila., 1862, 313 (San Francisco, California, Nov.).—COOPER, Orn. Cal., 1870, 263.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, pl. 33, figs. 4, 8.—AMERICAN ORNITHOLOGIST'S UNION, Check List, 1886, no. 499.—ANTHONY, Auk, iii, 1886, 167 (Beaverton and Wapita Lake, Washington Co., w. Oregon).—(?) EMERSON, Bull. no. 7, Cal. Ac. Sci., 1887, 428 (Poway, San Diego Co., California).—(??) BOND, Auk, vi, 1889, 341 (Cheyenne, Wyoming, 1 spec., Apr. 14).—LAWRENCE, (R. H.), Auk, ix, 1892, 45 (Grays Harbor, Washington).—FISHER, North Am. Fauna, no. 7, 1893, 75 (s. end Owens Lake, s. California, June 11; Ojai Valley, s. California, Dec.; etc.).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 455, pl. 6, figs. 16, 17 (eggs).—NEHRING, Our Native Birds, etc., ii, 1896, 257.

<sup>1</sup>For material and measurements, see May, N. Am. Birds, 1887, 270.

*A[gelæus] p[hæniceus] gubernator* COUES, Key N. Am. Birds, 2d ed., 1884, 404, part.  
*Icterus gubernator* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 187 (Oregon).  
*Agelaius gubernator californicus* NELSON, Auk, xiv, Jan., 1897, 59 (Stockton, California; coll. U. S. Nat. Mus.).—AMERICAN ORNITHOLOGIST'S UNION COMMITTEE, Auk, xiv, 1897, 128—(??) COOKE, Birds Colorado, 1897, 94 (Cheyenne, Wyoming, 1 spec., Apr. 14, 1889).—GRINNELL, Pub. ii, Pasadena Ac. Sci., 1898, 33 (Bixby and El Monte, Los Angeles Co., California, in winter).—KOBBE, Auk, xvii, 1900, 354 (Cape Disappointment, Washington, breeding, abundant).—MAILLARD, Condor, iii, 1901, 124 (San Benito Co., California, resident).—(?) BARLOW, Condor, iii, 1901, 168 (Sly Park and Lake Tahoe, Sierra Nevada, breeding).—RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 154 (geog. range).

### AGELAIUS GUBERNATOR GRANDIS (Nelson).

#### ATLIXCO RED-WING.

Similar to *A. g. gubernator*, but wing, tail, bill, and middle toe longer, the bill more slender; adult male with lesser wing-coverts more orange, the middle coverts always (?) more or less buffy or tawny (usually extensively so, sometimes with black only on tips of innermost coverts); adult female more extensively streaked beneath, the chest (sometimes even breast and upper part of abdomen) streaked, as well as throat.

*Adult male*.—Length (skins), 213.4–237.5 (221.2); wing, 130–139.2 (136.1); tail, 90.9–105.4 (94.7); culmen, from base, 22.1–25.1 (23.1); depth of bill at base, 11.4–13.2 (12.2); tarsus, 31.5–33.8 (32.8); middle toe, 22.1–24.1 (23.6).<sup>1</sup>

*Adult female*.—Length (skins), 184.2–190.5 (188.5); wing, 108–113.5 (110.5); tail, 76.5–78.7 (77.2); culmen, from base, 18.8–19.8 (19.6); depth of bill at base, 11.4–11.9 (11.7); tarsus, 26.9–29 (28.2); middle toe, 19.8–20.6 (20.3).<sup>2</sup>

Southeastern portion of Mexican plateau, in States of Puebla (Atlixco, Chietla, Orizaba,<sup>3</sup> etc.), Morelos?, Tlaxcala (Laguna del Rosario; Nativitas)?, and Hidalgo (Real del Monte)?

(?) *Agelaius phoeniceus* (not *Oriolus phæniceus* Linnæus) SWAINSON, Philos. Mag., n. s., i, 1827, 436 (Real del Monte and sides of the Cordillera, Hidalgo, Mexico).

(?) *Agelaius phoeniceus* SCLATER, Cat. Am. Birds, 1862, 135, part (Orizaba, Vera Cruz); Cat. Birds Brit. Mus., xi, 1886, 340, part (in synonymy).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 453, part (Real del Monte and sides of Corderilla, Hidalgo; Chietla, Puebla; Orizaba, Vera Cruz).

<sup>1</sup> Eight specimens.

<sup>2</sup> Five specimens.

<sup>3</sup> I doubtfully refer Orizaba specimens to this form. The two specimens examined differ from the Atlixco examples in having the lesser wing-coverts bright vermilion red instead of orange-chrome, one of them having the bill decidedly longer and more slender. In this last respect another Puebla skin (exact locality unknown) is even more aberrant, while the lesser wing-coverts are still deeper red. It is possible the birds resident in eastern Puebla may constitute still another form.

- (?) *Agelaius phoeniceus* SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (Orizaba, Vera Cruz).  
 (?) *Agelaius phoeniceus* FERRARI-PEREZ, Proc. U. S. Nat. Mus., xi, 1886, 151 (Chietla, Puebla).  
*Agelaius gubernator* (not *Parocolius gubernator* Wagler) SCLATER, Proc. Zool. Soc. Lond., 1857, 213 (Orizaba, Vera Cruz); 1859, 365 (Jalapa, Vera Cruz); Cat. Am. Birds, 1862, 135, part (Jalapa); Ibis, 1884, 10, part; Cat. Birds, Brit. Mus., xi, 1886, 341, part (Jalapa; Orizaba).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 454, part (Orizaba; Jalapa; Laguna del Rosario, Tlaxcala?).  
 (?) *Agelaius gubernator* FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 152 (Laguna del Rosario and Nativitas, Tlaxcala).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 499, part.  
 [*Agelaius*] *gubernator* SCLATER and SALVIN, Nom. Av. Neotr, 1873, 37, part.  
 [*Agelaius*] *gubernator* RIDGWAY, Man. N. Am. Birds, 1887, 370, part.  
*Agelaius phoeniceus*, var. *gubernator* BAIRD, BREWER and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 163, part.  
*Agelaius phoeniceus grandis* NELSON, Auk, xiv, Jan., 1897, 57 (Atlixco, Puebla; coll. U. S. Nat. Mus.).  
*Agelaius gubernator grandis* RIDGWAY, Proc. Wash. Ac. Sci., iii, Apr. 15, 1901, 154, geog. range).

**AGELAIUS PHENICEUS PHENICEUS (Linnaeus).**

**RED-WINGED BLACKBIRD.**

*Adult male in summer.*—Uniform deep black, with a very faint greenish blue gloss in certain lights; lesser wing-coverts bright poppy red or vermillion (varying to scarlet or even, more rarely, to orange-chrome); middle coverts wholly buff or ochraceous-buff (paler at tips, sometimes almost white in midsummer birds); bill, legs, and feet deep black; iris brown.

*Adult male in winter.*—Similar to the summer male but buff of



region showing a more or less distinct indication of a buffy or dull whitish stripe.

*Adult female in summer.*—Above dusky, varied with paler streaks and edgings; pileum with a more or less distinct median stripe<sup>1</sup> of pale buffy grayish, the dusky broad lateral stripes usually more or less streaked with brown or rusty; hindneck and sides of neck broadly streaked with pale buffy or grayish; scapulars and interscapulars more or less edged on inner webs with pale buffy grayish, on outer webs with rusty; secondaries, innermost primaries, rectrices, and primary coverts narrowly edged with pale grayish or buffy grayish, the upper tail-coverts margined with the same; greater coverts and outermost primaries edged with dull whitish; lesser coverts broadly margined with brownish gray or red, or both (often extensively red); middle coverts black, broadly margined terminally with white or pale buffy; a broad superciliary stripe of white, finely streaked with dusky, usually becoming buff or salmon color anteriorly (over eyes and lores); a broad postocular stripe of dusky; malar region and under parts dull white (the chin, throat, and malar region often buff or salmon pink), the under parts of the body broadly streaked or striped with dusky (sometimes almost black), these stripes broadest on flanks; under tail-coverts dusky, margined with white or pale buffy; chin and throat sometimes immaculate, but the latter usually marked with small wedge-shaped or triangular streaks of dusky, the sides of the throat margined by a more or less distinct dusky submalar stripe; bill dusky (the mandible usually paler, more or less horn colored); legs and feet dark horn color or dusky.

*Adult female in winter.*—Similar to the summer female, but the lighter markings of upper parts more conspicuous, more pronouncedly buffy and rusty, and the sides of head and under parts more or less tinged with buffy (superciliary stripe sometimes clear buff).

*Young (sexes alike).*—Much like adult female, but superciliary and malar stripes, chin, and throat yellowish (ocher yellow or buff-yellow), under parts of body with ground color pale buffy or yellowish, with the dusky streaks narrower; edgings to remiges distinctly buffy brown or fulvous.

*Adult male.*—Length (skins), 205.7–236.2 (216.7); wing, 116.3–125.7 (120.9); tail, 88.6–96 (91.7); culmen, from base, 22.4–25.4 (23.6); depth of bill at base, 12.2–13.5 (12.7); tarsus, 29.2–32.8 (30.2); middle toe, 20.6–22.6 (21.6).<sup>2</sup>

*Adult female.*—Length (skins), 172.7–189.2 (177.5); wing, 95.3–101.6 (98.3); tail, 70.1–77.5 (74.2); culmen, from base, 17.3–20.3 (19.3); depth of bill at base, 10.7–11.7 (10.9); tarsus, 25.4–26.4 (25.9); middle toe, 17.3–19.1 (18.3).<sup>3</sup>

<sup>1</sup> Except in much-worn midsummer specimens.

<sup>2</sup> Fourteen specimens.

<sup>3</sup> Ten specimens.

Eastern United States and more southern British Provinces, except Florida and Gulf coast; west to eastern base of Rocky Mountains; north to Nova Scotia, Province of Quebec, Ontario, Manitoba, etc.

[*Oriolus*] *phoeniceus* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 161 (based on *Sturnus niger*, *alia superne rubentis*, Catesby, Nat. Hist. Carolina, i, p. 13, pl. 13).—GMELIN, Syst. Nat., i, pt. i, 1788, 386.—LATHAM, Index Orn., i, 1790, 178.

*Agelaius phoeniceus* (not of Swainson, 1827) SWAINSON, Fauna Bor. Am., ii, 1831, 280.—BONAPARTE, Geog. and Comp. List, 1838, 29.—AUDUBON, Synopsis, 1839, 141; Birds Am., oct. ed., iv, 1842, 31, part, pl. 216.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 526, part; Cat. N. Am. Birds, 1859, no. 401, part.—CARPENTRER, Proc. Ac. Nat. Sci. Phila., 1866, 10, part (monogr.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 159, part, pl. 33, figs. 1, 2, 3.—GENTRY, Proc. Ac. Nat. Sci. Phila., 1874, 97 (habits).—HENSLOW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 82 (Fort Garland, Colorado, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 498, part.—COOKE, Bird Migr. Misc. Val., 1888, 163, chiefly (includes *A. p. fortis*; dates, etc.).—RIDGWAY, Orn. Illinois, i, 1889, 313.—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 572 (localities in Manitoba, etc.; habits; notes).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 449, part, pl. 6, figs. 13, 14, 15 (eggs).—NEHRING, Our Native Birds, etc., ii, 1896, 252, pl. 29, fig. 4.

*Agelaius phoeniceus* MAXIMILIAN, Journ. für Orn., vi, 1858, 263 (Pennsylvania, upper Missouri R., etc.).

*Agelaius phoeniceus* RIDGWAY, Man. N. Am. Birds, 1887, 369, part.

*Agelaius phoeniceus* CABANIS, Mus. Hein., i, 1850, 188 (South Carolina).

[*Agelaius*] *phoeniceus* BONAPARTE, Consp. Av., i, 1850, 430.

*Agelaius phoeniceus* (not of Sclater, 1857) SCLATER, Cat. Am. Birds, 1862, 135, part (e. United States); Cat. Birds Brit. Mus., xi, 1886, 340, part Nova Scotia; Canada; District Columbia; Illinois).—COUES, Check List, 1873, no. 212, part; 2d ed., 1882, no. 316, part.—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 175 (descr. young).—MAYNARD, Birds E. N. Am., 1881, 134, part.—MERRIAM, Bull. Nutt. Orn. Club, vii, 1882, 236 (Point de Monte, prov. Quebec, 1 spec., May 22, 1882).—BICKNELL, Auk, ii, 1885, 249 (song).—SALVIN and GODMAN, Biol. Centre. Am. Avcs., i, 1887, 153, part (in song only).

## AGELAIUS PHŒNICEUS FLORIDANUS Maynard.

## FLORIDA RED-WING.

Similar to *A. p. phœniceus*, but decidedly smaller, and with bill longer and more slender (both relatively and absolutely); adult male with color of middle wing-coverts rather deeper, at least in winter; adult female not constantly different in coloration from that of *A. p. phœniceus*, but chin and throat perhaps more often pinkish buff or salmon color, and this color when present rather deeper and often extended backward over chest.

*Adult male*.—Length (skins), 195.6–218.4 (209.3); wing, 109.2–114.8 (112.5); tail, 84.8–90.2 (87.9); culmen, from base, 22.9–26.7 (24.6); depth of bill at base, 10.9–11.9 (11.4); tarsus, 26.7–30 (28.5); middle toe, 18.8–22.1 (20.3).<sup>1</sup>

*Adult female*.—Length (skins), 170.2–185.4 (178.3); wing, 88.9–95.8 (92.7); tail, 67.1–74.9 (70.4); culmen, from base, 19.6–21.6 (20.3); depth of bill at base, 9.7–10.4 (9.9); tarsus, 24.4–29.5 (26.2); middle toe, 16.8–19.3.<sup>1</sup>

Peninsula of Florida (except southeastern coast and keys?), and along Gulf coast to Galveston, northeastern Texas (breeding).<sup>2</sup>

*Agelaius phœniceus* (not *Oriolus phœniceus* Linnæus) ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 284, part (Florida; crit.).—COUES, Key, 1872, 156, part; 2d ed., 1884, 404, part; Check List, 1873, no. 212, part; 2d ed., 1882, no. 316, part.—MERRIAM, Am. Nat., viii, 1874, 87 (Okahumkee, Florida).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 261, part.—MAYNARD, Birds E. N. Am., 1881, 134, part.

*Agelaius phœniceus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 10, part (monogr.).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 498, part.—COOMBS, Auk, ix, 1892, 205 (Bayou Teche, St. Marys Parish, Louisiana, breeding).—WAYNE, Auk, xii, 1895, 365 (Wacissa R., n. w. Florida, breeding).—BEYER, Proc. Louis. Soc. Nat. for 1897–99 (1900), 105 (Louisiana, breeding).

*Agelaius phœniceus bryanti* (not of Ridgway) SCOTT, Auk, vi, 1889, 320, part (Tarpon Springs and Punta Rassa, Florida).—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Suppl. to Check List, 1889, 12; Check List, abridged ed., 1889, no. 498b, part; 2d ed., 1895, no. 498b, part (coast Louisiana; Florida, part).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 453, part (coast Louisiana; Florida, part).

*Agelaius phœniceus floridanus* MAYNARD, Birds Eastern N. Am., 2d ed., pt. 40 [1896], 689.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xiv, 1897, 121, no. 498c.—RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 154 (geog. range).

<sup>1</sup> Ten specimens.

<sup>2</sup> Although slightly different in average proportions from Florida examples, breeding birds from the coast of Louisiana (Avery's Island) and Texas (Galveston) are so very close to them that I refer them to *A. p. floridanus* with little hesitation. The females examined agree minutely in coloration with those from Florida, as do also

## AGELAIUS PHOENICEUS BRYANTI Ridgway.

## BAHAMA RED-WING.

Similar to *A. p. floridanus*, but bill still longer; adult female much paler, with under parts more purely white, the dusky streaks much narrower, and dusky gray or brownish gray instead of nearly black; pileum brown, narrowly streaked with dusky (instead of the reverse), and lighter streaks on hindneck, back, and scapulars much broader and more conspicuous, the darker markings of the same portions less black, the rump and upper tail-coverts more grayish.

*Adult male*.—Length (skins), 193–214.6 (205.2); wing, 112.3–120.7 (114.3); tail, 83.8–88.1 (86.1); culmen, from base, 25.7–26.2 (25.9); depth of bill at base, 11.4–12.2 (11.7); tarsus, 27.9–30.2 (29.2); middle toe, 19.1–19.8 (19.6).<sup>1</sup>

*Adult female*.—Length (skins), 165.1–182.9 (173.2); wing, 89.9–95.8 (92.5); tail, 64.8–71.6 (68.6); culmen, from base, 18.5–20.3 (19.3); depth of bill at base, 10.2–10.4 (10.2); tarsus, 24.4–25.4 (24.9); middle toe, 16.5–18 (17.3).<sup>1</sup>

Bahamas (New Providence; Abaco; Andros; Berry Islands; Bimini;

the males from Louisiana (I have not seen males from Texas), the only apparent difference being the slightly shorter and thicker bills of the birds from Louisiana and Texas, in which respect they are intermediate between *floridanus* and *phoeniceus*, though nearer the former, as they also are in other measurements.

Average measurements are as follows:

Locality.	Wing	Tail.	Culmen, from base.	Depth of bill at base.	Tarsus.	Middle toe.
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Great Bahama; Cay Sal), and adjacent coast of Florida (Lake Worth; Miami; Coconut Grove), including Florida Keys to Key West.<sup>1</sup>

(?) *Agelaius phoeniceus* (not *Oriolus phoeniceus* Linnæus) CABANIS, Journ. für Orn., 1856, 11 (Cuba).

*Agelaius phoeniceus* CORY, Birds Bahama I., 1880, 98.

[*Agelaius*] *phoeniceus* CORY, List Birds W. I., 1885, 14.

*Agelaius phoeniceus* BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 119 (New Providence, Bahamas).—CORY, Auk, iii, 1886, 221; Birds W. I., 1889, 108 (Bahamas; Cuba?).

*A[gelaius] phoeniceus bryanti* RIDGWAY, Man. N. Am. Birds, 1887, 370 (Bahamas; coll. U. S. Nat. Mus.).

*Agelaius phoeniceus bryanti* RIDGWAY, Man. N. Am. Birds, 1887, 592; 2d ed., 1896, 613; Auk, viii, 1891, 334 (Abaco, Bahamas); Proc. Wash. Ac. Sci., iii, 1901, 154 (geog. range).—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Suppl. to Check List, 1889, 12, part; Check List, abridged ed., 1889, no. 498*b*, part (Bahamas; s. Florida, part); 2d ed., 1895, no. 498*b*, part (do.).—NORTHROP, Auk, viii, 1891, 71 (Andros I., Bahamas; habits).—CORY, Auk, viii, 1891, 295 (Berry Islands, Bahamas), 296 (Bimini, Bahamas), 350 (Great Bahama and Abaco, Bahamas), 352 (Cay Sal, Bahamas); Cat. W. I. Birds, 1892, 110, 146 (Great Bahama, Abaco, Bimini, Berry Islands, New Providence, Andros, and Cay Sal islands, Bahamas; Florida Keys).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 453, part (Bahamas; s. Florida, part).

#### AGELAIUS PHŒNICEUS RICHMONDI Nelson.

##### VERA CRUZ RED-WING.

Similar to *A. p. floridanus*, but slightly smaller; adult female much lighter colored, or about intermediate in coloration between those of *A. p. floridanus* and *A. p. bryanti*.<sup>2</sup>

*Adult male*.—Length (skins), 186.7–215.9 (197.9); wing, 102.6–120.1 (112); tail, 72.1–93.5 (82.8); culmen, from base, 20.8–26.7 (23.1); depth of bill at base, 10.4–12.7 (11.4); tarsus, 25.9–31.2 (27.9); middle toe, 18.8–22.4 (20.1).<sup>3</sup>

*Adult female*.—Length (skins), 157.5–185.4 (171.2); wing, 87.6–97.5 (91.9); tail, 63–77.5 (68.3); culmen, from base, 18.5–21.1 (19.6); depth of bill at base, 8.9–10.7 (9.9); tarsus, 24.6–26.4 (25.7); middle toe, 16.8–19.1 (18).<sup>4</sup>

Coast district and lower Rio Grande Valley of southern Texas (north

<sup>1</sup> I refer three females from southeastern Florida (Lake Worth, Miami, and Key West) to this form with some doubt. They differ from the two Bahaman examples in having the under parts much less purely white. I am inclined to think, however, that these are individual differences which would disappear in a large series of specimens.

<sup>2</sup> The adult female of *A. p. richmondi* is precisely similar in coloration to that of *A. p. sonoriensis*, but is much smaller.

<sup>3</sup> Thirty-eight specimens.

<sup>4</sup> Fourteen specimens.

Specimens from southern Texas, Tamaulipas (Alta Mira), and Nuevo Leon are larger than those from farther southward, and have shorter and thicker bills, but the females

to Velasco<sup>1</sup>) and southward over the coast plain of Tamaulipas (Matamoras, Alta Mira, etc.), Nuevo Leon (Monterey), and Vera Cruz (Tlalcotalpam, Guiterrez, Zamara, etc.), to Yucatan (including island of Cozumel), British Honduras (Belize), and eastern Guatemala (Lake Peten, Dueñas?, Coban?); in winter, south to eastern Nicaragua (San Carlos) and Costa Rica (Rio Frio).

*Agelaius phoeniceus* (not *Oriolus phoeniceus* Linnaeus) MOORE, Proc. Zool. Soc. Lond., 1859, 58 (Belize, British Honduras; Peten, e. Guatemala).—(?) SCLATER, Proc. Zool. Soc. Lond., 1857, 205 (Tlalcotalpam, Vera Cruz), (?) 1859, 381 (Oaxaca); Ibis, 1884, 10, part; Cat. Birds Brit. Mus., xi, 1886, 340, part (n. Yucatan; Cozumel I.; Belize; Lake Peten, Guatemala; Dueñas, Guatemala?; Bebedero, w. Costa Rica?).—(?) SCLATER and SALVIN, Ibis, 1859, 19 (Dueñas, Guatemala).—(?) FRANTZIUS, Journ. für Orn., 1869, 303 (Costa Rica).—SENNERT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 24 (Lower Rio Grande, Texas; descr. nest and eggs); v, 1879, 397 (lower Rio Grande).—MERRILL, Proc. U. S. Nat. Mus., i, 1879, 133 (Fort Brown, Texas, breeding).—NEHRUNG, Bull. Nutt. Orn. Club, vii, 1882, 166 (s. e. Texas, breeding).—(?) NUTTING, Proc. U. S. Nat. Mus., v, 1882, 392 (La Palma, w. Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1883, 446 (n. Yucatan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 453 (Tlalcotalpam, Vera Cruz; Oaxaca?; n. Yucatan; Cozumel; Belize; Peten, Coban?, and Dueñas?, Guatemala; La Palma, Bebedero, and Nicoya, w. Costa Rica?).

(?) *Agelaius phoeniceus* BOUCARD, Liste Ois. Guatemala, 1878, 36, part.

*Agelaius phoeniceus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 10, part (Yucatan; crit.).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (Bebedero and Nicoya, w. Costa Rica).—ZELEDON, Cat. Aves de Costa Rica, 1882, 10.—HANCOCK, Bull. Ridgw. Orn. Club, no. 2, 1887, 18 (Corpus Christi, Texas).—STONE, Proc. Ac. Nat. Sci. Phila., 1890, 208 (Progreso, Yucatan).—RHOADS, Proc. Ac. Nat. Sci. Phila., 1892, 108 (Nueces Bay, Texas, breeding).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (Rio Frio, e. Costa Rica; San Carlos, Nicaragua).—SINGLEY, Rep. Geol. Surv. Texas, 1894, 371 (Corpus Christi and Hidalgo, breeding).—CARROLL, Auk, xvi, 1900, 344 (Refugio Co., Texas, breeding).

[*Agelaius*] *phaeniceus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37, part.  
*Agelaius phaeniceus bryanti* (not of Ridgway) AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Check List, 2d ed., 1895, no. 498*b*, part (Yucatan; Nicaragua).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 453, part (Yucatan; Nicaragua).  
*Agelaius phaeniceus sonoriensis* (not of Ridgway) BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 453, part (lower Rio Grande Valley).  
*Agelaius phaeniceus richmondi* NELSON, Auk, xiv, Jan. 1897, 58 (Tlalcotalpam, Vera Cruz, s. e. Mexico; coll. U. S. Nat. Mus.).—RIDGWAY, Proc. Wash. Ac. Sci., iii, 1901, 154 (geog. range).

AGELAIUS PHŒNICEUS SONORIENSIS Ridgway.  
SONORAN RED-WING.

Similar in coloration to *A. p. richmondi*, but much larger.

*Adult male*.—Length (skins). 207–237.5 (221); wing, 121.9–129.3 (125.5); tail, 85.9–101.1 (93.5); culmen, from base, 22.6–25.4 (23.9); depth of bill at base, 11.4–13.2 (12.4); tarsus, 29–31.8 (30.5); middle toe, 21.1–22.9 (21.8).<sup>1</sup>

*Adult female*.—Length (skins), 172.7–199.7 (183.6); wing, 98.6–105.4 (98.8); culmen, from base, 17.8–21.3 (19.8); depth of bill at base, 9.4–10.9 (9.9); tarsus, 25.4–27.9 (26.7); middle toe, 17.8–20.3 (19.1).<sup>2</sup>

Lower Colorado Valley, in California and Arizona, southern Arizona in general, and southward over the coast plain of Sonora and Sinaloa to Territory of Tepic;<sup>3</sup> Cape St. Lucas, Lower California?.<sup>4</sup>

<sup>1</sup>Thirteen specimens.  
<sup>2</sup>Twenty-four specimens.  
<sup>3</sup>Specimens from Tepic are larger than those from Sinaloa, and may not really be referable to this form, the matter being rendered the more doubtful because all the Tepic examples are males. Possibly the thick-billed large subarctic form (*A. p. fortis*) may extend farther southward upon the high mountain meadows than it has yet been traced, even to that portion of the Sierra Madre immediately north of the Valley of the Rio Grande de Santiago, and there intergrade with the coast form (*A. p. sonoriensis*). Should this hypothesis prove correct, then these large Tepic specimens would be intergrades. Some of these Tepic specimens are large enough to be referable to *A. p. fortis*, but their bills are too long, and on the whole they come decidedly nearer to *A. p. sonoriensis*.

Comparative average measurements of the two series and of *A. p. fortis* are as follows:

Locality.	Wing.	Tail.	Culmen.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Twenty-three adult males of <i>A. p. fortis</i> .....	126	98	23.3	13.5	29.8	22.4
Six adult males of <i>A. p. sonoriensis</i> ? from Tepic ..	126.7	95.8	24.6	13.2	30.7	22.1
Six adult males of <i>A. p. sonoriensis</i> from Sinaloa..	124.5	92.5	23.4	11.9	30	21.6
One adult male of <i>A. p. sonoriensis</i> from Arizona..	121.9	85.9	21.6	12.2	32.8	20.8
FEMALES.						
Seventeen adult females of <i>A. p. fortis</i> .....	105.4	78.1	19.1	11.8	26.5	19.1
Eight adult females of <i>A. p. sonoriensis</i> from Sinaloa	102.9	72.9	20.3	9.9	27.2	18.5
Two adult females of <i>A. p. sonoriensis</i> from Sonora .	104.1	77.5	18.8	9.9	25.9	17.8
Nine adult females of <i>A. p. sonoricnsis</i> from Arizona	102.1	72.9	19.3	9.9	26.2	19.1

<sup>4</sup>The only specimen from the Cape district of Lower California that I have seen is a female, and seems to be referable to this form. It is without date, and in rather poor condition.

- Agelaius phoeniceus* (not *Oriolus phoeniceus* Linnaeus) Woodhouse, Rep. Sitgreaves' Expl. Zuffi and Col. R., 1853, 80.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 526, part (Eapia, Sonora); Cat. N. Am. Birds, 1859, no. 401, part; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 18 (Saltillo, Nuevo Leon; Espia, Sonora).—(?) KENNERLY, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 30, part (New Mexico).—COUES, Proc. Ac. Nat. Sci. Phila., 1866, 90 (Fort Whipple, Arizona); Check List, 1873, no. 212, part.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 10, part (monogr.).—COOPER, Orn. Cal., 1870, 261, part (lower Colorado Valley).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Mazatlan).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 159, part.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 261, part.—BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 200 (Tucson, Arizona, June).—BELDING, Proc. U. S. Nat. Mus., vi, 1883, 350 (La Paz, Lower California, winter).—SCLATER, Ibis, 1884, 10, part (monogr.), Cat. Birds Brit. Mus., xi, 1886, 340, part (in synonymy).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 498, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 453, part (Mazatlan).
- [*Agelaius*] *phoeniceus* COUES, Key N. Am. Birds, 1872, 156, part.
- Agelaius phoeniceus* COUES, Check List, 2d ed., 1882, no. 316, part.
- A[*gelatus*] *phoeniceus* COUES, Key N. Am. Birds, 2d ed., 1884, 404, part.
- Agelaius gubernator* (not *Paerocolius gubernator* Wagler) BAIRD, Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 18 (Colorado R., California).—KENNERLY, Rep. Pacific R. R. Surv., x, pt. iv, 1859, 31, part (Bill Williams' Fork and Colorado R., Arizona; Mojave R., California).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Mazatlan; Tepic).—(?) SCOTT, Auk, iv, 1887, 22 (Pinal Co., Arizona; common resident).
- Agelaius phoeniceus longirostris* (not *Agelaius longirostris* Salvadori<sup>1</sup>) RIDGWAY, Man. N. Am. Birds, 2d ed., 1896, 370.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xiv, 1897, 128 (Check List, no. 498a).—PRICE, Bull. Cooper Orn. Club, i, 1899, 92 (Yuma, Arizona, winter).
- A[*gelatus*] *phoeniceus sonoriensis* RIDGWAY, Man. N. Am. Birds, 1887, 370 (Mazatlan, w. Mexico; coll. U. S. Nat. Mus.).
- Agelaius phoeniceus sonoriensis* RIDGWAY, Man. N. Am. Birds, 1887, 592; Proc. Wash. Ac. Sci., iii, 1901, 154 (geog. range).—AMERICAN ORNITHOLOGISTS'

*Adult male.*—Length (skins), 212.1–241.3 (223.1); wing, 123.5–132.3 (126); tail, 88.5–105.4 (98); culmen, from base, 19.8–26.5 (23.3); depth of bill at base, 12.7–15 (13.5); tarsus, 29–31.5 (29.8); middle toe, 20.1–23.5 (22.4).<sup>1</sup>

*Adult female.*—Length (skins), 172.7–195 (186.2); wing, 101.6–109.2 (105.5); tail, 71.1–83.1 (78.1); culmen, from base, 17–21.2 (19.1); depth of bill at base, 10.9–12.7 (11.8); tarsus, 24.6–28.2 (26.5); middle toe, 18.3–20.6 (19.1).<sup>2</sup>

Breeding range, Mackenzie River, Athabasca, and other interior districts of British America. During migrations, the Great Plains, from eastern base of Rocky Mountains to Manitoba (Red River Settlement), Minnesota (Fort Snelling, May 11), Nebraska (Omaha, March 9), Iowa (Burlington, October), Indian Territory (Beaver Creek, November), western Illinois (Henderson County, Morgan County, March), northern Kentucky (Mason County, December), and southward through more southern Rocky Mountains to Arizona (Fort Verde, December, February; Big Chino Valley, March), and western Texas (El Paso, February).

*Agelaius phœniceus* (not *Oriolus phœniceus* Linnæus) BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 526, part (Red River Settlement, Manitoba<sup>3</sup>); Cat. N. Am. Birds, 1859, no. 401, part.

*Agelaius tricolor* (not *Icterus tricolor* Audubon) BLAKISTON, Ibis, 1863, 81 (Mackenzie R., British America).

*Agelaius gubernator* (not *Psarocolius gubernator* Wagler) BLAKISTON, Ibis, 1863, 81 (Mackenzie R.).

*Agelaius phœniceus fortis* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 153 (Omaha, Nebraska; coll. U. S. Nat. Mus.), 154 (geogr. range).

#### AGELAIUS PHŒNICEUS NEUTRALIS Ridgway.

##### SAN DIEGO RED-WING.

Similar to *A. p. sonoriensis*, but smaller, the adult female darker, with streaks less strongly contrasted above, those on lower parts rather broader and grayer, the upper parts with little if any rusty, even in winter plumage.

*Adult male.*—Length (skins), 199.4–228.6 (213.1); wing, 116.8–127 (122.9); tail, 85.1–97.8 (90.7); culmen, from base, 21.6–24.9 (23.1); depth of bill at base, 10.9–13.2 (12.2); tarsus, 28.7–31 (30.2); middle toe, 20.6–23.4 (21.6).<sup>4</sup>

*Adult female.*—Length (skins), 167.6–193 (181.9); wing, 96.5–104.1 (101.3); tail, 67.1–78.2 (72.4); culmen, from base, 18.5–21.1 (19.6); depth of bill at base, 10.4–11.4 (10.9); tarsus, 25.4–27.9 (26.9); middle toe, 16.8–20.6 (19.1).<sup>5</sup>

<sup>1</sup> Twenty-three specimens.

<sup>2</sup> Seventeen specimens.

<sup>3</sup> See next to last paragraph on p. 527 of work cited.

<sup>4</sup> Thirty-two specimens.

<sup>5</sup> Twenty-seven specimens.

Southern California<sup>1</sup> (to the Pacific coast in San Diego and Los Angeles counties), northern Lower California, Great Basin district, and southern portion of Rocky Mountain plateau; north to eastern British Columbia (Vernon, etc.); breeding southward to northern Chihuahua (Pacheco), New Mexico, and western Texas (Ysleta, 30 miles east of El Paso; Langtry, Valverde County, etc.); in winter, south to southern Texas (Brownsville, etc.).

*Agelaius phoeniceus* (not *Oriolus phoeniceus* Linnaeus) BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 526, part; Cat. N. Am. Birds, 1859, no. 401, part.—KENNERLY, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 30 (s. California).—(?) XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 192 (Fort Tejon, California).—(?) COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 207 (Oregon and Washington).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 10, part (monogr.).—COOPER, Orn. Cal., 1870, 261, part.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 159, part.—(?) HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 121 (Apache, Arizona, Aug.).—BENDIRE, Proc. Bost. Soc. N. H., 1877, 122 (Camp Harney, e. Oregon, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 498, part.—MORCOM, Bull. Ridgw. Orn. Club, no. 2, 1887, 47 (Coahuila and San Bernardino valleys, s. California; breeding).—FANNIN, Check List Birds Brit. Col., 1891, 33, part (e. side of Cascade Mts.).—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 47, part (Vernon, e. British Columbia).—GRINNELL, Pub. ii, Pasadena Ac. Sci., 1898, 33 (Los Angeles Co., California; resident).

*Agelaius phoeniceus* HENSHAW, Ann. Rep. Wheeler's Surv., 1877, 1309 (Carson, Nevada); Zool. Exp. W. 100th Merid., 1875, 313, part (Utah).—COUES, Check List, 1873, no. 212, part; 2d ed., 1882, no. 316, part.—(?) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 340, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 453, part (in synonymy).

<sup>1</sup>Specimens from southern California and northern Lower California seem to be somewhat different from Great Basin examples, but I do not venture to separate them; the series of specimens being scarcely satisfactory. In adult males of the form

- [*Agelaius phoeniceus*]  $\alpha$ . *phoeniceus* RIDGWAY, Orn. 40th Parallel, 1877, 503 (localities in Nevada and Utah; measurements, etc.).
- [*Agelaius*] *phoeniceus* COUES, Key N. Am. Birds, 1872, 156, part.
- [*Agelaius phoeniceus*]  $\alpha$ . *phoeniceus* COUES, Birds N. W., 1874, 186, part (in synonymy).
- A[gelæus] phoeniceus* HENSHAW, Orn. Rep. Wheeler's Exp., 1879, 302 (foot of e. slope Sierra Nevada, summer resid.; Carson, Nevada, in winter).—COUES, Key N. Am. Birds, 2d ed., 1884, 402, part.
- A[gelaius] phoeniceus* . . . var. *gubernator* RIDGWAY, Bull. Essex Inst. vii, Jan., 1875, 37 (Nevada).
- Agelaius gubernator* BENDIRE, Proc. Bost. Soc. N. H., 1877, 122 (Camp Harney, e. Oregon, breeding; descr. eggs).
- [*Agelaius phoeniceus*]  $\beta$ . *gubernator* RIDGWAY, Orn. 40th Parallel, 1877, 504, 505, part (Carson City and Truckee Reservation, Nevada).
- Agelaius gubernator* (not *Psarocolius gubernator* Wagler) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 341, part (Reno, Nevada).
- Agelaius phoeniceus* . . . var. *gubernator* HENSHAW, Ann. Rep. Wheeler's Surv., 1876, 249 (Los Angeles, California, June; Fort Tejon, California, Aug.).
- Agelaius phoeniceus* var. *gubernator* HENSHAW, Ann. Rep. Wheeler's Surv., 1877, 1305 (e. side Sierra Nevada).
- A[gelæus] phoeniceus gubernator* HENSHAW, Orn. Rep. Wheeler's Surv., 1879, 302 (Camp Harney, e. Oregon; Reno, etc., Nevada; crit.).
- Agelaius phoeniceus gubernator* MEARNs, Bull. Nutt. Orn. Club, iv, 1879, 165 (Fort Klamath, e. Oregon, breeding).—ALLEN, Bull. Nutt. Orn. Club, vi, 1881, 128 (Walla Walla, Washington).
- (?) *Agelaius phoeniceus longirostris* (not *A. longirostris* Salvadori) GRINNELL, Pub. ii, Pasadena Ac. Sci., 1898, 33 (near Pasadena, Los Angeles Co., California, March, Nov.).
- Agelaius phoeniceus neutralis* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 153 (Jacumba, San Diego Co., California; coll. U. S. Nat. Mus.), 154 (geog. range).

### AGELAIUS PHŒNICEUS CAURINUS Ridgway.

#### NORTHWESTERN RED-WING.

Similar to *A. p. phoeniceus* but wing and bill longer, the latter more slender; adult male with buff of middle wing-coverts deeper (deep ochraceous-buff or ochraceous in winter plumage); adult female rather more heavily streaked with black below and, in winter plumage, with upper parts much more conspicuously marked with rusty.

*Adult male*.—Length (skins), 218.4–231.1 (222.8); wing, 116.1–129.5 (123.2); tail, 86.1–97.3 (91.7); culmen, from base, 22.9–25.7 (24.4); depth of bill at base, 11.4–12.2 (11.7); tarsus, 28.2–31 (29.5); middle toe, 21.3–22.4 (21.8).<sup>1</sup>

*Adult female*.—Length (skins) 172.7–198.1 (189); wing, 97.8–107.2 (103.1); tail, 71.1–83.1 (77.5); culmen, from base, 19.6–21.8 (20.8); tarsus, 25.4–27.9 (26.9); middle toe, 18.3–19.8 (19.1).<sup>1</sup>

Northwest coast district, from British Columbia (Vancouver Island and coast of mainland) south through western Washington and Oregon to northern California (Mendocino County, May 20).

<sup>1</sup> Nine specimens.

*Agelaius phoeniceus* (not *Oriolus phoeniceus* Linnaeus) BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 526, part. Fort Steilacoom, Washington. Cat. N. Am. Birds, 1859, no. 401, part.—COOPER, Orn. Cal., 1870, 261, part.—FANNIS, Check List Birds Brit. Columbia, 1891, 33, part (w. side Cascades, Vancouver I., breeding).—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 47, part (Victoria and Lulu Island, British Columbia; Washington).—BROOKS, Auk, xvii, 1900, 106 (s. British Columbia; crit.).—KOBBE, Auk, xvii, 1900, 354 (Cape Disappointment, Washington, breeding).

*A[gelaius] phoeniceus* RIDGWAY, Man. N. Am. Birds, 1887, 369, part.

*Agelaius phoeniceus konurckus* (not of Ridgway) BREWSTER, Auk, x, 1893, 237 (Chilliack, British Columbia, Jan. to Mar.; crit.).

*Agelaius phoeniceus curruvus* RIDGWAY, Proc. Wash. Acad. Sci., iii, Apr. 15, 1901, 153 (Cedar Hill, Vancouver Island, British Columbia; coll. U. S. Nat. Mus.), 154 (geog. range).

The following references to forms of *Agelaius phoeniceus* I have not been able to satisfactorily allocate:

*Agelaius phoeniceus* SCLATER, Cat. Am. Birds, 1862, 135, part (Orizaba, Vera Cruz; Guatemala).—COLES, Proc. Ac. Nat. Sci. Phila., 1866, 90 (Fort Whipple, Arizona, resident).—BELDING, Proc. U. S. Nat. Mus., i, 1879, 420 (Stockton and Marysville, California, Feb. to Apr.).—CHERRY, Sci. Proc. Roy. Dublin Soc., iii, 1882 (43), (Navarro Co., Texas, resident, habits).

*Agelaius phoeniceus* FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 151 (Chiotla, Puebla).—TOWNSEND, Proc. U. S. Nat. Mus., x, 1887, 213 (Red Bluff and n. of Mount Shasta, California).—BECKHAM, Proc. U. S. Nat. Mus., x, 1888, 670 (San Antonio, Texas, winter).—ATTWATER, Auk, ix, 1892, 237 (San Antonio, Texas, breeding).—MITCHELL, Auk, xv, 1898, 309 (San Miguel Co., New Mexico, breeding up to 9,000 ft.).—MERRIAM, North Am. Fauna, no. 16, 1899, 122 (Shasta Valley, n. California).

*Agelaius gubernator* (not *Parocollis gubernator* Wagler) KENNERLY, Rep. Pacific R. R. Surv., iv, pt. vi, 1857, 11 (Pueblo Creek, New Mexico).

*Agelaius phoeniceus* (?) SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 553 (Orizaba, Vera Cruz; migratory?).

#### AGELAIUS ASSIMILIS Gundlach.

##### CUBAN RED-WING.

*Adult male.* Similar to adult male of *A. phoeniceus floridanus* or *A. p. bryanti*, but smaller, with shorter and thicker bill; length (skin, one specimen), 198.1; wing, 107.2–109.2 (108.2); tail, 81.8–83.3 (82.6); culmen, from base, 23.4–24.9 (24.1); depth of bill at base, 11.4–12.4 (11.9); tarsus, 26.7–27.9 (27.2); middle toe, 21.1 (21.3).<sup>1</sup>

*Adult female.*—Entirely uniform black, including lesser wing-coverts; length (skins), 172.7–182.9 (177.8); wing, 91.7–95.3 (93); tail, 68.1–74.9 (71.9); culmen, from base, 21.1–21.6 (21.3); depth of bill at base, 11.4–11.7 (11.4); tarsus, 25.4–26.7 (25.9); middle toe, 17.3–20.3 (18.5).<sup>2</sup>

Island of Cuba (including Isle of Pines), Greater Antilles.

*Agelaius assimilis* "Gundlach, MSS." LEMBEYE, Aves de la Isla de Cuba, 1850, 64 (Cuba).

<sup>1</sup>Two specimens.

<sup>2</sup>Three specimens.



*Agelaius assimilis* LEMBEYE, Aves de la Isla de Cuba, 1850, pl. 9, fig. 3.—GUNDLACH, Journ. für Orn., iv., 1856, 12; 1861, 332, 413; 1862, 189; 1874, 131; Repert. Fisico-Nat. Cuba, i, 1866, 288; Boston Journ. N. H., vi, 1857, 316.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 10 (monogr.)—CORY, Auk, iii, 1886, 221; Birds W. I., 1889, 108; Cat. W. I. Birds, 1892, 14, 110, 129, 146 (Cuba; Isle of Pines).

[*Agelæus*] *assimilis* CORY, List Birds W. I., 1885, 14.

*A[gelaius] assimilis* RIDGWAY, Man. N. Am. Birds, 1887, 371.

*Agelæus assimilis* SCLATER, Ibis, 1884, 10 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 341.

[*Agelaius phœniceus*] var. *assimilis* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 159.

[*Agelæus phœniceus*] b. *assimilis* COUES, Birds N. W., 1874, 186 (synonymy.)

### AGELAIUS HUMERALIS (Vigors).

#### TAWNY-SHOULDERED BLACKBIRD.

*Adult male*.—Uniform glossy black, with a faint bluish green reflection in certain lights; lesser wing-coverts uniform cinnamon-rufous or tawny, the middle coverts similar but paler, especially at tips; bill, legs, and feet black; iris brown; length (skins), 167.6–188 (176.5); wing, 99.6–107.2 (103.4); tail, 74.2–83.8 (78.7); culmen, from base, 17.8–19.1 (18.3); depth of bill at base, 9.1–10.2 (9.9); tarsus, 23.6–25.4 (24.4); middle toe, 17.8–19.3 (18.5).<sup>1</sup>

*Adult female*.—Similar to adult male but smaller and with the cinnamon-rufous or tawny wing-patch more restricted, at least the middle coverts being partly black (sometimes wholly so); length (skins), 160–177.8 (167.4); wing, 92.7–96.5 (94.7); tail, 69.1–74.9 (72.9); culmen, from base, 16.5–17.3 (17); depth of bill at base, 8.9–10.2 (9.4); tarsus, 22.6–24.1 (23.4); middle toe, 16.5–17.8 (17).<sup>1</sup>

Island of Cuba, Greater Antilles.

*Leistes humeralis* VIGORS, Zool. Journ., iii, Nov., 1827, 442 (near Havana, Cuba).

*Icterus humeralis* D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 91, pl. 20.

*Agelaius humeralis* GUNDLACH, Journ. für Orn., 1874, 130; Repert. Fisico-Nat. Cuba, i, 1866, 288.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 11 (monogr.).—PELZELN, Ibis, 1873, 28 (crit.).—CORY, Auk, iii, 1886, 220; Birds W. I., 1889, 107; Cat. W. I. Birds, 1892, 14, 110, 129.—CHAPMAN, Bull. Am. Mus. Nat. Hist., iv, 1892, 303 (habits).

*Agelæus humeralis* GUNDLACH, Journ. für Orn., 1856, 13; 1861, 332.

*Agelæus humeralis* SCLATER, Cat. Am. Birds, 1862, 136; Ibis, 1884, 11 (monogr.); Cat Birds Brit. Mus., xi, 1886, 342 (San Cristobal, Cuba).

[*Agelaius*] *humeralis* BONAPARTE, Consp. Av., i, 1850, 430 ("Antilles").—GRAY, Hand-list, ii, 1870, 33, no. 6473.

[*Agelæus*] *humeralis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37.—CORY, List Birds W. I., 1885, 14.

*A[gelaius] humeralis* RIDGWAY, Man. N. Am. Birds, 1887, 371.

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<sup>1</sup> Seven specimens.

## AGELAIUS XANTHOMUS (Sclater).

## YELLOW-SHOULDERED BLACKBIRD.

*Adult male*.—Uniform glossy black, with a faint bluish green reflection; lesser and middle wing-coverts clear lemon yellow, the latter sometimes slightly paler (rarely inclining to white at tips); bill, legs, and feet black; iris brown; length (skin, one specimen), 198.1; wing, 107.2–108; tail, 83.8–86.9 (84.8); culmen, from base, 20.8–22.1; depth of bill at base, 9.7; tarsus, 24.1–25.4; middle toe, 19.6–19.8.<sup>1</sup>

*Adult female*.—Similar to the adult male in coloration, but smaller; length (skins), 172.7–198.1 (185.4); wing, 95–97.3 (96.3); tail, 74.2–78.7 (77); culmen, from base, 19.8–20.3 (20.1); depth of bill at base, 8.1–8.9 (8.6); tarsus, 24.1–24.9 (24.4); middle toe, 18.3.<sup>2</sup>

*Young*.—Uniform dull black, except lesser wing-coverts, which are light buffy yellow or yellowish buff, the middle coverts partly of the same color.

*Immature*.—Similar to adults, but yellow wing-patch more or less broken posteriorly by spots or blotches of black.

Island of Porto Rico, Greater Antilles. (Island of St. Thomas?)

*Agelaius chrysopterus* VIEILLOT, Nouv. Dict. d'Hist. Nat., xxxiv, 1819, 539 part (St. Thomas, W. I.); Enc. Méth., ii, 1823, 713, part.—GUNDLACH, Anal. Soc. Esp. Hist. Nat., vii, 1878, 211 (Porto Rico); Journ. für Orn., 1874, 312 (Porto Rico); 1878, 177 (Porto Rico).

*Agelaius chrysopterus* SUNDEVALL, Öfv. K. Vet.-Akad. Förh., 1869, 597 (Porto Rico).

[*Agelaius*] *chrysopterus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37 (Porto Rico).

*Icterus xanthomus* SCLATER, Cat. Am. Birds, 1862, 131 ("Mexico;" coll. P. L. Sclater).—TAYLOR, Ibis, 1864, 168 (Porto Rico).—BRYANT, Proc. Boet. Soc. N. H., x, 1866, 254 (Porto Rico).

*Hyphantus xanthomus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 63 (monogr.; Porto

base, where terminating in an obtuse point at a distance posterior to the nostrils which about equals the basal width of the mandible; commissure straight, or nearly so, to beyond nostrils, where deflexed to the rictus. Nostril on lateral median line of maxilla, nearly circular, with overhanging membrane (narrower anteriorly), its posterior edge touching feathering of frontal antiæ. Wing moderate or rather short (more than three times as long as culmen, about four times as long as tarsus), the tip moderately produced (longest primaries exceeding secondaries by between one-half and two-thirds the length of culmen); outermost (ninth) primary equal to fourth or intermediate between fifth and fourth; seventh and sixth longest, the eighth but little shorter; inner webs of outer primaries not perceptibly sinuated. Tail a little more than two-thirds as long as wing, even or very slightly rounded, the rectrices broad, but not widened terminally as in *Agelaius*, the lateral ones with inner web more than three times as wide as the outer. Tarsus decidedly shorter than culmen, slightly less than one-fourth as long as wing, its anterior scutella distinct on inner but indistinct on outer side; middle toe, with claw, slightly longer than tarsus; claws of lateral toes reaching about to base of middle claw; hallux shorter than lateral toes but much stouter, its claw shorter than the digit; all the claws strongly curved, acute.

*Coloration*.—Uniform black, in both sexes.

*Range*.—Island of Jamaica, Greater Antilles. (Monotypic.)

#### NESOPSAR NIGERRIMUS (Osburn).

##### OSBURN'S BLACKBIRD.

*Adults (sexes alike)*.—Entirely uniform glossy blue-black; bill, legs, and feet black, the former sometimes brownish basally.

*Adult male*.—Length (skins), 175.3–185.4 (180.3); wing, 99.6–101.6 (100.6); tail, 73.2–74.2 (73.7); culmen, from base, 26.7–30.5 (28.5); depth of bill at base, 9.7; tarsus, 22.6–23.4 (22.9); middle toe, 16.5–17.8 (17).<sup>1</sup>

*Adult female*.—Length (skins), 158.8–177.8 (171.5); wing, 94.5–97.8 (95.5); tail, 63.5–71.9 (68.8); culmen, from base, 25.1–26.7 (25.7); depth of bill at base, 9.7–9.9 (9.9); tarsus, 22.9; middle toe, 17.3.<sup>2</sup>

Island of Jamaica, Greater Antilles.

[*Icterus?*] *nigerrimus* OSBURN, Zoologist, 1859, 6661, in text (Jamaica; coll. P. L. Sclater).

*Nesopsar nigerrimus* SCLATER, Ibis, i, Oct., 1859, 457, footnote; Proc. Zool. Soc. Lond., 1861, 74; Cat. Am. Birds, 1862, 139; Cat. Birds Brit. Mus., xi, 1886, 353.—ALBRECHT, Journ. für Orn., 1862, 197.—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 299.—CORY, Auk, iii, 1886, 223 (synonymy and descr.); Birds W. I., 1889, 110 (do); Cat. W. I. Birds, 1892, 15, 111, 130.—SCOTT, Auk, x, 1893, 178.

<sup>1</sup> Two specimens.

<sup>2</sup> Three specimens.

[*Nesophaea*] *nigerrimus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38. CORY,  
List Birds W. I., 1885, 14.

[*Nesophaea*] *nigerrimus* NEWTON (E. and A.), Handb. Jamaica, 1881, 103.

*Agelaius nigerrimus* CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 12 (monogr.) -  
PELZELN, Ibis, 1873, 28.

*Agelaius nigerrimus* SCLATER, Ibis, 1884, 14 (monogr.).

#### Genus XANTHOCEPHALUS Bonaparte.

*Xanthocephalus* BONAPARTE, Consj. Av., 1, June 15, 1850, 431 (Type, *Icterus  
xanthocephalus* Bonaparte, = *I. xanthocephalus* Bonaparte.)

Medium-sized terrestrial and paludicoline Icteridæ, with bill decidedly shorter than head; wing long and pointed (nearly seven times as long as culmen, the ninth or eighth primary longest); tarsus nearly one fourth as long as wing; middle toe with claw nearly as long as tarsus, the lateral toes with their claws reaching beyond base of middle claw, the claws long and not strongly curved; color black or dusky, with more or less of yellow on chest (adult male with head and neck yellow also and with a white patch on wing).

Bill decidedly shorter than head, stout-conical, compressed, with nearly straight outlines, its basal depth about equal to distance from nasal fossæ to tip of maxilla, its basal width much less; culmen straight, flattened, the basal end elevated and slightly arched; gonys straight or very slightly convex, slightly shorter than maxilla from nostril; commissure nearly straight to behind nostril, where strongly deflexed to the rictus. Nostril pyriform-oval (obtusely pointed anteriorly), overhung by a very broad and prominent horny operculum, its posterior end in contact with the feathering of the frontal antæ. Wing long (nearly seven times as long as culmen), long tipped (primaries exceeding secondaries by about twice the length of the culmen), pointed; outermost (ninth) primary usually longest, the eighth and seventh, successively, but little shorter, the former sometimes equal to the ninth, rarely a little longer; inner webs of four outer primaries slightly sinuated near tips. Tail more than two-thirds as long as wing, slightly rounded or double-rounded, the rectrices rather hard and stiff; outer web of lateral rectrix very narrow in middle portion, widening subterminally. Tarsus more than twice as long as bill from nostril, nearly one fourth as long as wing, rather slender, its anterior scutella distinct; middle toe, with claw, nearly as long as tarsus; outer toe with claw reaching beyond base of middle claw, the inner longer, with its claw reaching to middle of middle claw; hallux nearly as long as outer toe, decidedly stouter, its claw nearly as long as the digit, rather slender, and not strongly curved; anterior claws not strongly curved.

*Coloration.* Adult male black with head, neck, and chest yellow, the wing with a white patch; adult female and young dusky with under parts more or less streaked, the chest with more or less yellow.

*Range.* - Western and central temperate North America. (Monotypic.)

## XANTHOCEPHALUS XANTHOCEPHALUS (Bonaparte).

## YELLOW-HEADED BLACKBIRD.

*Adult male in summer.*—Head, neck, and chest yellow or orange (varying from canary yellow to almost cadmium orange, rarely to saturn red); lores, orbital region, anterior portion of malar region, and chin black; rest of plumage uniform black, relieved by a white patch on the wing, involving the primary coverts (except their tips and shafts) and portions of the outermost greater coverts; anal region yellow or orange; bill, legs, and feet black; iris brown.

*Adult male in winter.*—Similar to the summer plumage, but yellow or orange of pileum and hindneck obscured (sometimes almost concealed) by dusky tips to the feathers.

*Adult female in summer.*—General color dusky grayish brown or sooty; no white on wings; a more or less distinct superciliary stripe, malar region, chin, and throat dull whitish, usually more or less tinged with yellow, passing into light yellow (naples yellow or buff-yellow) on chest; breast broadly streaked with white; anal tuft yellowish; bill, legs, and feet black; iris brown.

*Adult female in winter.*—Similar to the summer female, but superciliary stripe and cheeks (malar region) dull buff-yellowish; chin and throat duller whitish; chest deeper yellow (ocher yellow), and white streaks on breast less distinct; bill dusky brownish, paler on mandible, especially basally.

*Immature male, first winter.*—Similar to the winter female, but larger; general color darker (nearly black on pileum, auriculars, and orbital region); superciliary stripe deeper ocher yellow; malar region, chin, and throat chrome yellow, and chest dull cadmium yellow or orange-ochraceous; no white streaks on breast; primary coverts narrowly tipped with white. (In following spring and summer similar, but yellow of chest, etc., purer, pileum, etc., blacker, and primary coverts without white tips.)

*Young (first plumage).*—Head, neck, and chest pale cinnamon or dull ochraceous-buff, paler (dull whitish) on chin and throat; pileum with a median stripe of dusky; rest of plumage mostly dusky, the feathers (especially wing-coverts and tertials) more or less distinctly margined with pale cinnamon or dull tawny; breast more or less streaked with dull whitish; median line of breast and abdomen and thighs dull whitish.

*Nestling.*—General color plain cinnamon or cinnamon-buff (varying to clay color), much paler on under parts of body, where sometimes inclining to dull whitish; on the back, scapulars, and rump the buffy or cinnamomeous color more or less broken by dusky bases to the feathers; edge of wing whitish; greater wing-coverts very broadly tipped with whitish or pale cinnamon-buff; primary-coverts more narrowly tipped with whitish; bill brownish; legs and feet light-colored (flesh color in life?).

*Adult male*.—Length (skins), 218.4–256.5 (242.3); wing, 135.1–145.5 (141.2); tail, 93–108.5 (102.6); culmen, from base, 21.1–25.1 (22.9); depth of bill at base, 11.9–13.2 (12.4); tarsus, 33.3–37.1 (35.8); middle toe, 23.4–26.2 (24.6).<sup>1</sup>

*Adult female*.—Length (skins), 190.5–210.8 (204.7); wing, 110–117.9 (113.8); tail, 78.7–87.6 (81.8); culmen, from base, 19.6–21.1 (20.3); depth of bill at base, 9.9–10.7 (10.4); tarsus, 29.7–31.5 (30.5); middle toe, 20.3–22.1 (21.1).<sup>2</sup>

More open districts of western and central North America; north to southern British Columbia, Assiniboia, Athabasca, Keewatin (to about 58° 30'), and Manitoba; breeding east to the prairie sloughs of the upper Mississippi Valley, as far as northeastern Illinois (Cook and Lake counties), northwestern Indiana (Lake County), southwestern Michigan (?), southern Wisconsin, etc.; breeding southward to Arizona, New Mexico, and northern Tamaulipas (Matamoras), probably to northern Mexico in general; in winter southward over the greater part of Mexico, as far as States of Sinaloa (Culiacan, Mazatlan, Presidio), Jalisco (Lake Chapala, Mesquitic), Mexico (Valley of Mexico), Tlaxcala (Laguna del Rosario), and Puebla (Chietla, Huehuetlan, San Martin Texmelucan). Accidental straggler to Ontario (Toronto, several records), Quebec (Godbout), Maine (Spruce Head), Massachusetts (Watertown), Connecticut (Hartford), Pennsylvania (Allegheny County, Meadville), West Virginia (Upshur County), Maryland (Anne Arundel County), District of Columbia, South Carolina (Chester County), Florida, Cuba, and even to Greenland (Nenortalik, September 2, 1820).

*Icterus anthracinus* BONAPARTE, Journ. Ac. Nat. Sci. Phila., 1823, 223 (eastern

- Agelaius canthocephalus* SWAINSON and RICHARDSON, Fauna Bor. Am., ii, 1831, 281 (ii to 58°). — BONAPARTE, Geog. and Comp. List., 1838, 29. — AUDUBON, Synopsis, 1839, 140. Birds Am., oct. ed., iv, 1842, 24, pl. 213. BAIRO, in Stansbury's Rep. of Salt Lake, 1852, 326 (New Mexico). — WOODROUSE, Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 80. — NEWBERRY, Rep. Pacific R. R. Surv. vi, 1857, 86 (Sacramento Valley, Pitt R., and Klamath lakes, in California). — HEERMANN, Rep. Pacific R. R. Survey, x, pt. vi, 1859, 52 (California; Fort Inge, Texas). — MAXIMILIAN, Journ. für Orn., vi, 1858, 261 (upper Missouri R.). — CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 11 (monogr.; near Philadelphia, Pennsylvania, several). — TRIPPE, Proc. Essex Inst., vi, 1871, 117 (Minnesota).
- Agelaius canthocephalus* GAMBEL, Proc. Ac. Nat. Sci. Phila., 1847, 204.
- X[anthocephalus] canthocephalus* JORDAN, Man. Vert., ed. 1, 1884, 92. — RIDGWAY, Man. N. Am. Birds, 1887, 368.
- Xanthocephalus canthocephalus* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 356. — AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 497. — CORY, Auk, iii, 1886, 222 (Cuba; references). Birds W. I., 1889, 100 (Cuba). — FERRARI PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 152 (Chietla, Huehuetlan, and San Martin Texmelucan, Puebla, Dec., Jan., May; Laguna del Rosario, Tlaxcala, Jan., Oct.). — CORY, Auk, iii, 1886, 222; Birds W. I., 1889, 109 (Cuba, 1 spec.). — SETON, Auk, iii, 1886, 321 (Assiniboia and Red R. valleys, Manitoba, summer). — TREAT, Auk, iv, 1887, 256 (near Hartford, Connecticut, 1 spec., July). — RIDGWAY, Auk, iv, 1887, 256 (Spruce Head, Maine, 1 spec., Nov.). — ORN. THOMAS, i, 1889, 312. — SCOTT, Auk, iv, 1887, 22 (Tucson, Florence, etc., Arizona, fall, winter, and spring). — COOKE, Bird Migr. Miss. Val., 1888, 162 (localities, dates, etc.). — WARREN (H. B.), Birds Pennsylvania, 1890, 212 (near Philadelphia, 1 spec., Meadville, Crawford Co., 1 pair, Mar. 25, 1890). — RIVES, Birds Virginia, 1890, 70 (near Buckhannon, Upshur Co., West Virginia, 1 spec., spring 1888). — MEARNS, Auk, vii, 1890, 257 (Mogollon Mts., Arizona, breeding). — THOMSON, Proc. U. S. Nat. Mus., xiii, 1891, 571 (Manitoba localities, habits, notes). — COSS, Birds Kansas, 1891, 396 (summer resid.). — HARRIS, Auk, x, 1893, 92 (District Columbia, 1 spec., Aug. 29, 1892). — NORRIS, Auk, x, 1893, 302 (Metinac I., Knox Co., Maine, 1 spec., Aug. 17, 1882); xi, 1894, 78 (do.). — NUTTALL, Bull. Labr. N. H. Univ. Iowa, ii, no. 3, 1893, 274 (Chemawawin, lower Saskatchewan, abundant). — BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 146, pl. 6, figs. 10-12 (eggs). — NEHRING, Our Native Birds, etc., ii, 1896, 248, pl. 29, fig. 3. — BUTLER, Proc. Ind. Ac. Sci. for 1891, 165 (Lake Co., Indiana). Birds Indiana, 1897, 892 (Lake Co., breeding). — KNIGHT, Bul. Univ. Maine, no. 3, 1897, 86 (Spruce Head, Knox Co., Maine, 1 spec., Aug. 17, 1882). — RHODES, Auk, xvi, 1899, 312 (Allegheny Co., Pennsylvania, 1 spec., Apr. 26, 1895). — BROOKS, Auk, xvii, 1900, 106 (Chilliwick, British Columbia). — BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 105 (s. w. Louisiana, winter resid.).
- Xanthocephalus canthocephalus* REIDER, Proc. Md. Ac. Sci., 1891, 139 (near Curtis Bay, Anne Arundel Co., Maryland, 1 spec., Sept. 10, 1890).
- Icterus icterocephalus* (not of Daudin, 1800, ex *Oriolus icterocephalus* Linnæus) BONAPARTE, Ann. Orn., i, 1835, 27, pl. 3 (Rocky Mts.). — NUTTALL, Man. Orn. U. S. and Can., i, 1832, 170, 2d ed., 1840, 187.
- Agelaius icterocephalus* CABANIS, Mus. Heim., i, 1851, 188.
- Xanthocephalus icterocephalus* BAIRO, Rep. Pacific R. R. Serv., ix, 1858, 531; Rep. U. S. and Mex. Bound. Surv., i, pt. 2, 1859, 18 (Nuevo Leon: El Paso, Texas); Cat. N. Am. Birds, 1859, no. 404. — SEATER, Cat. Am. Birds, 1862, 136, Proc. Zool. Soc. Lond., 1864, 175 (valley of Mexico). — GRUNDMAN, Journ. für Orn., 1862, 178 (Cuba, 1 spec.); 1874, 153 (do.). — Report Fisico-Nat. Cuba, i, 1866, 288. — ALLEN, Am. Nat. iii, 1869, 636 (Watertown, Massachusetts); Bull.



- Mus. Comp. Zool., iii, 1872, 178 (Kansas, Utah), Mem. Bost. Soc. N. H., i, 1868, 498 (Iowa), 518 (n. Illinois). —COUES, Am. Nat., v, 1871, 195-200 (biography); Check List, 1873, no. 213; 2d ed., 1882, no. 319, Birds N. W., 1874, 188. —COOPER, Orn. Cal., 1870, 267. —SNOW, Birds Kansas, 1873, 8 (e. Kansas, breeding). —BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 167, pl. 32, fig. 9, pl. 33, fig. 9. —LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Mazatlan, Sinaloa). —NEWTON, Man. N. H. Greenland, 1875, 99 (Nenortalik, 1 spec., Sept. 2, 1820). —BREWER, Proc. Bost. Soc. N. H., xvi, 1875, 442 (Massachusetts, accidental). —RIDGWAY, Orn. 40th Parallel, 1877, 502 (Sacramento, California, localities in Nevada and Utah; habits, etc.). —Nom. N. Am. Birds, 1881, no. 200. —SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 24 (Hidalgo, s. Texas, winter resid.). —MERRILL, Proc. U. S. Nat. Mus., i, 1879, 133 (Fort Brown, Texas, winter). —GINN, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 487 (s. w. Michigan, breeding?). —MERRIAM, Bull. Nutt. Orn. Club, vi, 1881, 246 (Godbout, prov. Quebec, 1 spec., Sept. 1878). —MAYNARD, Birds E. N. Am., 1881, 137. —BELDING, Proc. U. S. Nat. Mus., v, 1883, 546 (San José del Cabo, Lower California). —LOOMIS, Auk, i, 1884, 293 (Chester, South Carolina, 1 spec., Apr. 18, 1884); ii, 1885, 192 (do.). —SEYON, Auk, ii, 1885, 334 (Toronto, Ontario, several records). —FRILDEN, Ibis, 1889, 489 (Barbados, Lesser Antilles). —CORY, Cat. Birds W. I., 1892, 110, 146 (Cuba; Barbados).
- [*Xanthocephalus uterocephalus* COUES, Key N. Am. Birds, 1872, 156. —SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37. —CORY, List Birds W. I., 1885, 14 (Cuba).
- X[*anthocephalus*] *uterocephalus* NELSON, Bull. Essex Inst., viii, 1876, 111 (n. e. Illinois, summer resid.). —COUES, Key N. Am. Birds, 2d ed., 1884, 404.
- Agelaius longipes* SWANSON, Philos. Mag., new ser., i, no. 6, June, 1827, 436 (table-land of Mexico, coll. Bullock Mus.)
- Xanthocephalus longipes* SCLATER, Ibis, 1884, 14 (monogr.; Presidio, near Mazatlan, etc.); Cat. Birds Brit. Mus., xi, 1886, 350. —SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 455.
- Pe[roscia] perspicillatus* WAGLER, Isis, 1829, 753 (ex *Icterus perspicillatus* Lichtenstein, manuscript).
- [*Xanthocephalus*] *perspicillatus* BONAPARTE, Conspr. Av., i, 1850, 431.
- Agelaius perspicillatus* REINHARDT, Ibis, 1861, 7 (Nenortalik, Greenland; 1 spec., Sept. 2, 1820).
- Icterus fremontii* LICHTENSTEIN, Isis, 1843, 60 (Greenland). —BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 332 (Greenland). —REINHARDT, Vid. Med. for 1853 (1854), 82 (Greenland).

#### Genus LEISTES Vigors

- Leistes* VIGORS, Zool. Journ., n, no. vi, July, 1825, 191. (Type, *Oriolus americanus* Gmelin, — *Emberiza militaris* Linnaeus.)
- Pedotribes*<sup>1</sup> CAVANIS, Mus. Hein., i, Sept. 10, 1851, 191. (Type, *Oriolus guianensis* Linnaeus, — *Emberiza militaris* Linnaeus.)

Rather small terrestrial Icteridæ with short conical bill, short tail, rather long, pointed wings, and long legs, the under parts with more or less of red.

Bill much shorter than head, conical, compressed, acute, its depth at base much more than one-half the length of culmen (nearly equal to distance from nostril to tip of maxilla), its basal width more than

<sup>1</sup>"Von *œteropis*ns, den Erdboden häufig betretend."



one-half the length of culmen; culmen nearly straight but elevated and decidedly arched basally, faintly depressed in middle portion and slightly decurved terminally, the top broad and rounded; gonys straight, shorter than maxilla from nostril; maxillary tomium nearly straight, but faintly concave anteriorly and convex in middle, the rictal portion very strongly and rather abruptly deflexed; mandibular tomium nearly straight for terminal half, then arched and strongly deflexed to the rictus. Nostril rather large, triangular (obtusely pointed anteriorly), overhung by a prominent and conspicuous convex horny operculum, the posterior end touching feathers of frontal antiæ. Wing moderate (nearly five times as long as culmen, more than three times as long as tarsus), the tip well produced (projecting for more than length of culmen but less than length of tarsus), pointed; outermost (ninth) primary longest, the eighth, seventh, and sixth, successively, but little shorter; inner webs of two outer primaries slightly sinuated; longest tertial projecting decidedly beyond secondaries. Tail short (about five-eighths as long as wing), even, the rectrices rigid, broad, with extreme tip more or less pointed, with aculeate tips of the shafts slightly projecting. Tarsus long (more than half as long again as culmen, nearly one-third as long as wing), slender, the anterior scutella distinct; middle toe, with claw, slightly shorter than tarsus; outer toe with claw falling far short of base of middle claw, the inner slightly longer but with claw still falling decidedly short of base of middle claw; hallux about as long as inner toe (longer than outer), much stouter, its claw nearly as long as the digit, rather slender, strongly arched, acute.

*Coloration*.—Above blackish, or streaked and barred with brown and dusky; beneath with more or less of red.

*Range*.—South America, from Argentina and southern Brazil to the Isthmus of Panama (Chiriqui). (Two species.)

#### LEISTES MILITARIS (Linnæus).

##### CAYENNE RED-BREASTED BLACKBIRD.

*Adult male in breeding dress*.—Uniform black, with traces (more or less distinct) of grayish brown bars on upper tail-coverts and rectrices and of lighter edgings on wing-feathers; throat, chest, breast, and upper portion of abdomen uniform rich vermilion red; bill black; legs and feet blackish brown.

*Adult male after breeding season*.—Similar to the above, but the black portions of the plumage broken by light brown or pale buffy grayish edgings, these most conspicuous on median line of pileum, back, scapulars, wings, and under tail-coverts; terminal portion of tertials, rectrices, and longer upper tail-coverts barred with brownish gray; bill horn brown, the mandible paler; legs and feet horn brown.

*Adult female in breeding dress*.—Above black, broken by pale buffy brownish edges to feathers, producing rather broad streaks on back.

scapulars, and hindneck; pileum with a distinct median stripe of pale grayish buffy streaks, the black lateral portions narrowly and indistinctly streaked with light olive-brownish; lesser wing-coverts broadly margined with brownish gray, the margins or edges of other wing-feathers more brown or buffy; rump grayish olive, broadly but not distinctly, streaked with dusky; terminal portion of secondaries and rectrices barred, more or less, with brownish gray; upper tail-coverts brownish gray narrowly barred with dusky; a broad superciliary stripe of dull buffy; a blackish postocular streak; auricular region and sides of neck light buffy grayish brown, the latter streaked with blackish; chin, throat, chest, breast, and upper part of abdomen plain light wood brown or dull brownish buff, the breast and abdomen tinged with pinkish red; lower abdomen, flanks, and under tail-coverts light buffy olive, broadly streaked with dusky, the last also narrowly barred with the same; under wing-coverts uniform sooty black; edge of wing, particularly the carpal region, pinkish red.

*Adult female after breeding season.*—Similar to the preceding, but paler markings of upper parts broader (the blackish streaks correspondingly narrower), and the color more brown; general color of under parts rather deeper, with dusky streaks on flanks, etc., narrower; under wing-coverts dusky grayish.

*Young.*—Somewhat like post-nuptial adult female, but chest and sides streaked with dusky.<sup>1</sup>

*Adult male.*—Length (skins), 137.2–194.3 (170.4); wing, 88.9–99.1 (95); tail, 48.8–67.8 (55.4); culmen, from base, 19.8–22.9 (20.3); depth of bill at base, 10–12.7 (11.9); tarsus, 27.9–32.8 (30.5); middle toe, 20.6–23.5 (22.1).<sup>2</sup>

*Adult female.*—Length (skins), 165.1–170.2 (167.4); wing, 83.8–89.9



Amazon Valley (Santarem, Pará, Mexiana, etc., Brazil; Xeberos, eastern Peru) and northward through Cayenne, British Guiana (Roraima; Demerara), Trinidad, Venezuela, Colombia (Bogota), and Isthmus of Panama (Lion Hill; Panama) to Chiriqui (Mina de Chorchá; David); western Ecuador (Guayaquil).

[*Emberiza*] *militaris* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 178 (based on *Turdus ater, pectore coccineo*. Mus. Adol. Friderici, i, 1754, 18; "America").

[*Tanagra*] *militaris* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 316.—GMELIN, Syst. Nat., i, 1788, 895.—LATHAM, Index Orn., i, 1790, 431.

*Agelaius militaris* VIEILLOT, Gal. Ois., ii, 1834, 128, pl. 88.

*Ps[arocolius] militaris* WAGLER, Syst. Av., 1827, *Psarocolius*, sp. 11.

*Leistes militaris* CASSIN, Proc. Ac. Nat. Sci. Phila., xviii, 1866, 14 (monogr.; Brazil; Guiana; Trinidad).—LÖNNBERG, K. Svensk. Vet.-Akad. Handl., Bd. 22, Afd., iv, no 1, 1896, 29 (crit. nomencl.).

[*Oriolus*] *guianensis* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 162 (based on *Icterus guianensis* Brisson, Orn., ii, 107).—GMELIN, Syst. Nat., i, 1788, 388.—LATHAM, Index Orn., i, 1790, 179.

[*Trupialis*] *guianensis* BONAPARTE, Consp. Av., i, 1850, 430 (Guiana; Brazil).—BURMEISTER, Syst. Ueb. Th. Bras. iii, 1856, 260.

*P[edotribes] guianensis* CABANIS, Mus. Hein., i, Sept., 1851, 191 (Guiana).

*Leistes guianensis* SCLATER, Proc. Zool. Soc. Lond., 1857, 19 (Bogota, Colombia), 265 (Santarem, lower Amazon); Cat. Am. Birds, 1862, 138 (Cayenne; Trinidad; Bogota); Ibis, 1884, 21 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 348 (Mina de Chorchá, Veragua; Panama; Bogota; Guayaquil, w. Ecuador; Trinidad; Roraima and Georgetown, British Guiana; Cayenne; Mexiana I., lower Amazon; Rio Madeira; Cayntaba, Brazil).—TAYLOR, Ibis., 1864, 84 (Trinidad).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1867, 573 (Pará, lower Amazon), 750 (Xeberos, e. Peru); 1869, 252 (Venezuela); 1873, 267 (Xeberos).—SALVIN, Proc. Zool. Soc. Lond., 1870, 176 (Veragua, Panama), 191 (Mina de Chorchá, Veragua); Ibis, 1885, 218 (British Guiana).—FINSCH, Proc. Zool. Soc. Lond., 1870, 576 (Trinidad).—LAYARD, Ibis, 1873, 381 (Pará).—TACZANOWSKI, Orn. du Pérou, ii, 1884, 427.—ALLEN, Bull. Essex Inst., viii, 1876, 79 (Santarem, lower Amazon).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 458 (Mina de Chorchá; Lion Hill, Panama R. R.).—RIKER and CHAPMAN, Auk, vii, 1890, 269 (Santarem).—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 37 (Trinidad).

[*Leistes*] *guianensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38.

[*Oriolus*] *americanus* GMELIN, Syst. Nat., i, pt. i, 1788, 386 (based on *Troupiale de Cayenne* Buffon, Hist. Nat. des Ois., 3, 218, etc.).—LATHAM, Index Orn., i, 1790, 178.

*Icterus americanus* TEMMINCK, Cat. Syst., 1807, 47.

(?) *Xanthornus rubricollis* HAHN, Vögel aus Asien, etc., pt. v, 1819, pl. 2.

*Leistes erythrothorax* "Natterer" PELZELN, Orn. Bras., iii, 1870, 197, 326 (Cuyatába, Brazil; coll. Vienna Mus.).

[*Leistes*] *erythrothorax* SCLATER and SALVIN, Nom. Av. Neotr. 1873, 38.

*Leistes superciliaris* (not *Trupialis superciliaris* Bonaparte) FORBES, Ibis, 1881, 339 (Cabo, n. e. Brazil; habits).

#### Genus STURNELLA Vieillot.

*Sturnella* VIEILLOT, Analyse, 1816, 34. (Type, *Alauda magna* Linnæus.)

*Cirulus* BREDOW, Wiegmann's Archiv. für Natürg., drit. jahrg., erster band, 1837, 413, in text. (Type, *C. pratensis* Bredow, = *Sturnella meridionalis* Sclater.)

*Pedopsaris* GLOGER, Handbuch, 1842, 292. (Type, *Alauda magna* Linnæus.)

Medium-sized terrestrial Icteridæ with long, slender, bill, short tail with pointed rectrices, and long legs and toes, the plumage much streaked and barred above, more or less yellow beneath, the lateral rectrices partly white.

Bill about as long as head (or slightly shorter or longer), narrowly wedge-shaped, acute and depressed at tip, its basal depth about one-third the culmen or a little more, its basal depth slightly less; culmen nearly straight, but faintly convex terminally, straight or slightly depressed in middle, more or less elevated and arched basally, flattened, especially between the frontal antiæ, where distinctly ridged laterally; gonys straight, or slightly concave terminally, slightly shorter than maxilla from nostril; commissure nearly or quite straight to much behind nostril, then strongly and rather abruptly deflexed to the rictus. Nostril ovate, obtusely pointed anteriorly, overhung by a prominent thick horny operculum, its posterior end in contact with feathering of the frontal antiæ. Wing moderate or rather short (about three to three and a half times as long as culmen, about two and a half to nearly three times as long as tarsus), its tip rather short (less than length of culmen) but pointed; outermost (ninth) primary equal to or longer than sixth, rarely slightly shorter, sometimes longest, the ninth to the sixth longest (these nearly equal); inner web of four outer primaries faintly sinuated; longest tertial projecting decidedly beyond secondaries. Tail short (between two-thirds and three-fourths as long as wing), rounded, the rectrices rigid, narrowed terminally, the two or three middle pairs pointed and more or less acuminate. Tarsus long (much longer than culmen, nearly or quite one-third as long as wing), rather stout, its anterior scutella distinct; middle toe, with claw, decidedly shorter than tarsus, outer toe with

or more forms becomes a matter of extreme difficulty. The first formal separation of a southern form was made by Mr. Outram Bangs, who named a Florida subspecies *Sturnella magna argutula*,<sup>1</sup> all representatives of the species from eastward of the range of *S. neglecta*, excepting those from the peninsula of Florida, being referred to *S. magna magna*. Mr. Frank M. Chapman has more recently reviewed the subject,<sup>2</sup> and concludes, regarding the status of *S. m. argutula*, that "if the application of this name be restricted to the isolated Florida bird, it may prove a convenient means of expressing the slight differentiation which that form exhibits. If, however, as its proposer suggests, it be applied to the Gulf Coast and Mississippi Valley specimens, it will only result in the confusion which always follows our attempts to definitely name differences which do not definitely exist."

With much the same material as that upon which Mr. Chapman based his conclusions, and many additional specimens, I find myself unable to agree with him. In the first place, the Florida birds are not isolated, the range of the species being quite continuous; in the second, the breeding birds from the coast district of Louisiana show the characters of Florida birds carried still farther—that is, they are both smaller and darker; again, breeding birds from the southern portions of Illinois and Indiana (within the limits of the Austroriparian or Lower Austral life-zone) are far more similar in size and coloration to those from the extreme South than they are to those from New England and the eastern Middle States. In short, if the species be subdivided at all within the eastern or humid division of the Austral life-zone, the questions to be decided are (1) how many divisions are necessary or desirable, and (2) where the geographic line or lines separating their breeding ranges should be drawn. After considering these questions very carefully in all their bearings I have arrived at the conclusion that to recognize two forms, corresponding in their breeding ranges with the Transition and Upper Austral zones on the one hand, and, essentially, the Lower Austral on the other, would better express the facts. It is true, necessarily, that within each of these two geographic areas there is considerable local variation, but this is comparatively insignificant. It is also true that Florida specimens are not appreciably different within the Lower Austral and Tropical divisions of the peninsula, respectively, and that specimens from the extreme western portions of the humid division of the Lower Austral zone (in southeastern Texas) are so much different from those of other parts of that faunal area as to merit recognition as a third form, this also extending southward into the Tropical zone in northeastern Mexico; consequently the respective ranges of these two Southern forms do not coincide absolutely with the limits of faunal areas.

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<sup>1</sup>Proc. New England Zool. Club, i, Feb. 28, 1899, 19–21. (The Florida birds had previously been referred by Mr. Chapman to *S. m. mexicana*.)

<sup>2</sup>A Study of the Genus *Sturnella*. Bull. Am. Mus. Nat. Hist., xiii, article xxi 297–320. (Author's edition published Dec. 31, 1900.)

flanks similar, but more or less tinged with buff and with black streaks rather narrower; under tail-coverts pale buffy or buffy white, narrowly streaked with black; thighs plain buff or buffy white, sometimes with a few very narrow streaks of dusky; under wing-coverts white, becoming yellow along edge of wing; maxilla black or dusky, edged with paler; mandible grayish in dried skin (pale grayish blue in life) with tip dusky; iris brown; legs and feet pale brownish in dried skins, pale pinkish gray in life.

*Adult male in winter.*—Similar to the summer male, but with less black and more brown above, the tips of the scapulars and interscapulars broadly tipped with brown, largely covering the black portion of the feathers; blackish lateral stripes of pileum more broadly streaked with brown, the median stripe more buffy; flanks, under tail-coverts, etc., more buffy.

*Adult female in summer.*—Similar to the male, but much smaller; lateral stripes of pileum more broadly streaked with brown, the post-ocular stripe brown streaked with black, instead of uniform black; sides of head and neck more buffy; black jugular crescent relatively smaller, the feathers usually more or less tipped with light grayish; yellow of throat, breast, etc., rather duller.

*Adult female in winter.*—Similar to the summer female, but browner above, with the black spots on back and scapulars more concealed, and the white parts more buffy.

*Young.*—Above much like adults, but the scapulars, interscapulars, and tertials margined terminally with whitish or buffy; head-stripes less sharply defined, the superciliary stripe dull buffy throughout; yellow of breast, etc., very pale and dull, changing gradually into the buffy of sides, flanks, etc., the latter much less distinctly or

[*Alauda*] *magna* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 167 (Carolinas; based on *Alauda magna* Catesby, Nat. Hist. Carolina, i, p. 33, pl. 33); ed. 12, i, 1766, 289.—GMELIN, Syst. Nat., i, 1788, 801.

*Alauda magna* WILSON, Am. Orn., iii, 1811, 20, pl. 19.

*Sturnella magna* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 535; Cat. N. Am. Birds, 1859, no. 406.—HAYDEN, Trans. Amer. Philos. Soc., ser. 2, xii, 1862, 169.—VERRILL, Proc. Essex Inst., iii, 1862, 157 (s. Maine, summer).—BLAKISTON, Ibis., 1862, 7 (Forks of Saskatchewan, Apr. 15).—ALLEN, Mem. Bost. Soc. N. H., i, 1868, 496 (Iowa, etc.).—TRIPPE, Proc. Bost. Soc. N. H., xi, 1872, 239 (Iowa).—HARTING, Handb. Brit. Birds, 1872, 118 (England, escaped).—SNOW, Birds Kansas, 1873, 8; ed. 3, 1875, 8 (summer resident).—GENTRY, Proc. Ac. Nat. Sci. Phila., 1874, 98 (habits).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 174, pl. 34, fig. 2.—MEARNS, Bull. Nutt. Orn. Club, iv, 1879, 36 (Fishkill, New York, winter).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 263; Orn. Illinois, i, 1889, 316, colored plate (frontispiece).—CHAMBERLAIN, Bull. Nat. Hist. Soc. New Brunsw., no. 1, 1882, 41 (New Brunswick, rare summer resident).—KNOWLTON, Bull. Nutt. Orn. Club, viii, 1883, 182 (Middlebury, Vermont, Dec. 9).—LANGILLE, Our Birds in their Haunts, 1884, 84, 85 (habits; song).—BICKNELL, Auk, ii, 1885, 250 (song).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 358, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 501, part.—THOMPSON, Trans. Canad. Inst., i, 1890, 3 (Toronto, Ontario, Jan., Feb.).—GOSS, Birds Kansas, 1891, 400 (abundant in e. and middle, rare in w. Kansas).—BEAL, Yearbook U. S. Dept. Agric. for 1895, 420–426, fig. 110 (food, etc.).—NEHRLING, Our Native Birds, etc., ii, 1896, 159, pl. 29, fig. 5.—KNIGHT, Bull. Univ. Maine, no. 3, 1897, 87 (rare summer resident).—FLEMING, Auk, xviii, 1901, 40 (Muskoka and Port Sydney, n. Ontario, summer).—BREWSTER, Auk, xviii, 1901, 194 (Rangely, Maine, 1 spec., Apr. 21).

*S[turnella] magna* COUES, Key N. Am. Birds, 2d ed., 1884, 406.—RIDGWAY, Man. N. Am. Birds, 1887, 372.

[*Sturnella magna*] var. *magna* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 172.

[*Sturnella magna*] a. *magna* COUES, Birds N. W., 1874, 190 (synonymy).

*Sturnella magna magna* BANGS, Proc. New Engl. Zool. Club, i, Feb. 28, 1899, 20, in text.

(?) [*Sturnus*] *ludovicianus* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 290 ("Louisiana;" based on *Sturnus ludovicianus* Brisson, Orn., ii, p. 449, pl. 41, fig. 1).—GMELIN, Syst. Nat., i, 1788, 802.—LATHAM, Index Orn., i, 1790, 323.

*Sturnus ludovicianus* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 180.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 147.—AUDUBON, Orn. Biog., ii, 1834, 216, part; v, 1839, 492, pl. 136.

*Sturnella ludoviciana* SWAINSON, Fauna Bor.-Am., ii, 1831, 282.—AUDUBON, Synopsis, 1839, 148, part (includes *S. neglecta*).—SCLATER, Ibis, 1861, 177 (Suffolk, England); Proc. Zool. Soc. Lond., 1861, 30 (do.); Cat. Am. Birds, 1862, 139.—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 23 (monogr.).—SCOTT, Bull. Nutt. Orn. Club, iv, 1879, 145 (Johnson Co., w. Missouri).

[*Sturnella*] *ludoviciana* BONAPARTE, Consp. Av., i, 1850, 429.

*Cucicus alaudarius* DAUDIN, Traité d'Orn., ii, 1800, 325 (based on *Sturnus ludovicianus* and *Alauda magna* Linnæus).

*S[turnella] collaris* VIEILLOT, Enc. Méth., ii, 1823, 633 (cites *Sturnus ludovicianus* and *Alauda magna* Linnæus, etc.).

*Sturnella collaris* VIEILLOT, Gal. Ois., i, 1834, 134.

*Sturnus collaris* WAGLER, Syst. Av., 1827, *Sturnus*, sp. 1.

*Sturnella colaris* VIRILLOT, Gal. Ois., i, 1834, pl. 90.

[*Sturnella magna*.] a. Subsp. *typica* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 358, in list of specimens (District Columbia; New York; Illinois).

**STURNELLA MAGNA ARGUTULA** Bangs.

**SOUTHERN MEADOWLARK.**

Similar to *S. m. magna*, but decidedly smaller and coloration darker; upper parts with relatively more black (this prevailing on back in breeding season), the brown markings deeper or more decidedly brown (varying from raw umber to mummy brown); yellow of under parts averaging deeper; white on lateral rectrices more restricted.

*Adult male*.—Length (skins), 205.5–234.7 (219.2); wing, 104.6–118.9 (111.8); tail, 67.6–78.5 (72.9); culmen, from base, 30.5–35.1 (32.8); tarsus, 39.4–43.9 (41.4); middle toe, 27.4–31.8 (29.2).<sup>1</sup>

*Adult female.* Length (skins), 191.8–199.4 (197.1); wing, 95.3–101.6 (99.1); tail, 60.2–67.1 (63); culmen, from base, 27.9–30.2 (28.7); tarsus, 36.3–40.6 (38.4); middle toe; 25.9–30.2 (27.4).\*

Lower Austral or Austroriparian life-zone of eastern United States, from Florida, the Carolinas (?), etc., to Louisiana, and north through lower Mississippi Valley to southeastern Illinois (Richland, Lawrence, and Wabash counties) and southwestern Indiana (Knox County).<sup>3</sup>

<sup>1</sup> Sixteen specimens.

<sup>2</sup> Eight specimens.

Average measurements according to locality are as follows:

[illegible]



*Sturnella ludoviciana* (not *Sturnus ludovicianus* Linnæus) ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 288, excl. syn. (e. Florida; crit.).

*Sturnella magna* (not *Alauda magna* Linnæus) MERRIAM, Am. Nat., viii, 1874, 87 (Okahumkee, Florida).—MAYNARD, Birds E. N. Am., 1881, 139, part (Florida).—BEYER, Proc. Louis. Soc. Nat. for 1897–99 (1900), 105 (Louisiana, breeding).

*Sturnella magna mexicana* (not *Sturnella mexicana* Selater) CHAPMAN, Auk, v, 1888, 273 (Gainesville, Florida; crit.).—SCOTT, Auk, vi, 1889, 320 (Tarpon Springs, etc., Florida; crit.).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 461, part.

*Sturnella magna argutula* BANGS, Proc. New Engl. Zool. Soc., i, Feb. 28, 1899, 20 (Dunedin, Hillsboro Co., Florida; coll. E. A. and O. Bangs).—ALLEN, Auk, xviii, 1901, 174 (republication of original descr.).

STURNELLA MAGNA HOOPESI Stone.

TEXAS MEADOWLARK.

Similar to *S. m. magna*, but yellow of under parts deeper even than in *S. m. argutula*, and of a slightly (sometimes decidedly) orange hue; coloration of upper parts paler, with black bars on tertials and middle rectrices more frequently isolated, as well as narrower; size of upper Mississippi Valley specimens of *S. m. magna*.

*Adult male*.—Length (skins), 200.7–230.6 (215.6); wing, 113–126 (117.1); tail, 63.5–79.2 (72.4); culmen, from base, 30.2–35.6 (33.3); tarsus, 37.8–44.4 (41); middle toe, 24.1–33 (28.7).<sup>1</sup>

*Adult female*.—Length (skins), 195.6–205.7 (200.1); wing, 100.3–109.7 (106.4); tail, 64–73.7 (68.3); culmen, from base, 30.5–33.5 (31.7); tarsus, 36.8–39.4 (37.8); middle toe, 27.4–30.5 (28.7).<sup>2</sup>

Southeastern Texas and westward through Rio Grande Valley and southern New Mexico (San Luis Springs, Guadalupe Mountains, etc.) to southern Arizona (Calabasas, San Bernardino Ranch, Sachill, etc.); southward into Sonora (San Pedro, Cachuta, Nacory, Santa Cruz River, etc.), Chihuahua (San Diego), and Tamaulipas (also probably Coahuila and Nuevo Leon).

<sup>1</sup> Twenty-seven specimens.  
<sup>2</sup> Nine specimens (all from Texas).  
Adult males from different localities average as follows:

Locality.	Wing.	Tail.	Culmen.	Tarsus.	Middle toe.
Eight adult males from Corpus Christi, Texas (measured by R. Ridgway) .....	116.8	74.9	34.8	42.9	30.9
Eight adult males from other parts of Texas (measured by J. H. Riley) .....	116.6	73.9	33.8	40.6	28.2
Nine adult males from Mexican boundary (New Mexico and Arizona) .....	119.2	69.6	32	39.9	26.7
Two adult males from southern Tamaulipas .....	116.1	72.4	31.7	40.6	30.5
Three adult males of <i>S. m. mexicana</i> from Guanajuato, Durango, and Michoacan .....	115.3	70.1	30.8	37.1	25

- Sturnella magna* (not *Alauda magna* Linnaeus) BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas, Dec.).—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 24 (Brownsville, Texas).—MERRILL, Proc. U. S. Nat. Mus., i, 1878, 133 (Fort Brown, Texas, winter).—(?) OGILBY, Sci. Proc. Roy. Dubl. Soc., iii, 1882 (45) (Navarro Co., Texas, Oct. to Feb.).—NEHRLING, Bull. Nutt. Orn. Club, vii, 1882, 166 (Harris Co., n. e. Texas, resident).—HANCOCK, Bull. Ridgw. Orn. Club, no. 2, 1887, 18 (Corpus Christi, Texas).—RHODES, Proc. Ac. Nat. Sci. Phila., 1892, 108 (Corpus Christi, Texas).—SINGLEY, Rep. Geol. Surv. Tex., 1894, 371 (Corpus Christi, Rio Grande City, and Hidalgo, Texas).—BENDIRE, Life Hist. Am. Birds, ii, 1895, 458, part (Texas).—CARROLL, Auk, xvii, 1900, 345 (Refugio Co., Texas, breeding).
- S[turnella] mexicana* (not of Sclater) BREWER, Ibis, 1878, 487 (Fort Brown, Texas).
- Sturnella mexicana* BREWER, Bull. Nutt. Orn. Club, iii, 1878, 152 (Fort Brown, Texas).
- Sturnella magna* var. *mexicana* [RIDGWAY and] MERRILL, Proc. U. S. Nat. Mus., i, 1878, 134, excl. syn. (Fort Brown, Texas, summer resident).
- [*Sturnella magna*.] Var. *mexicana* OGILBY, Sci. Proc. Roy. Dubl. Soc., iii, 1882 (45) (Navarro Co., Texas, summer resident; habits).
- Sturnella magna mexicana* ALLEN, Bull. Nutt. Orn. Club, v, Apr., 1880, 90; Bull. Am. Mus. N. H., v, 1893, 37 (San Diego, n. w. Chihuahua; San Pedro, Cachuta, and Nacory, n. e. Sonora).—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 183, 218, 232; Nom. N. Am. Birds, 1881, no. 263a.—BREWSTER, Auk, ii, 1885, 198 (Crittenden, Arizona, July).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 501a.—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 461, part, pl. 6, fig. 22 (Fort Brown, etc., s. Texas; Matamoros, Tamaulipas).—COOK, Bird Migr. Miss. Val., 1888, 167 (Rio Grande and Eagle Pass, Texas).
- S[turnella] m[agna] mexicana* COUES, Key N. Am. Birds, 2d ed., 1884, 406, part.
- S[turnella] magna mexicana* RIDGWAY, Man. N. Am. Birds, 1887, 372, part.
- Sturnella magna hoopesi* STONE, Proc. Ac. Nat. Sci. Phila., Mar., 1897, 149 (Brownsville, Texas; coll. J. Hoopes<sup>1</sup>).—AMERICAN ORNITHOLOGISTS' UNION, Auk, xvi, 1899, 113 (Check List, no. 501a).

specimen), 66; culmen, from base, 29.2–31.8 (30.5); tarsus, 35.8–38.6 (37.1); middle toe, 25.4–28.5 (26.9).<sup>1</sup>

Southern portion of Mexican plateau, in States of Vera Cruz, Puebla, Oaxaca (northern and western), Guanajuato, Durango, Jalisco, etc., and Territory of Tepic; also, highlands of southeastern Oaxaca, Chiapas, and Guatemala.<sup>2</sup>

*Sturnella magna* (not *Alauda magna* Linnæus) SWAINSON, Philos. Mag., n. s., i, 1827, 436 (Real del Monte, Hidalgo).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 358, part.

*S[turnella] hippocrepis* (not *Sturnus hippocrepis* Wagler) BONAPARTE, Consp. Av., i, 1850, 429, part (Mexico).

*Sturnella hippocrepis* SCLATER, Proc. Zool. Soc. Lond., 1856, 301 (Cordova, Vera Cruz); 1859, 365 (Jalapa, Vera Cruz), 381 (Oaxaca).—SCLATER and SALVIN, Ibis, 1859, 19 (Dueñas, Guatemala).—SALVIN and SCLATER, Ibis, 1860, 34 (Dueñas).

*Sturnella mexicana* SCLATER, Ibis, 1st ser., iii, Apr., 1861, 179 (Jalapa, Cordova, and Orizaba, Vera Cruz; coll. P. L. Sclater?); Cat. Am. Birds, 1862, 139 (Jalapa).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 24 (Mexico; Guatemala).

[*Sturnella magna*] var. *mexicana* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 172, part.

*Sturnella magna* var. *mexicana* LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 24 (Barrio and Santa Efigenia, Oaxaca).

[*Sturnella magna*] d. *mexicana* COUES, Birds N. W., 1874, 190, part (synonymy).

*Sturnella ludoviciana mexicana* SCLATER, Ibis, Jan., 1884, 26, part.

*Sturnella magna mexicana* AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 501a, part.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 152 (Llano de Chapulco and Chietla, Puebla).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 456, part (descr. eggs).

[*Sturnella magna*.] c. Subsp. *mexicana* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 360, in list of specimens, part (localities in Mexico and Guatemala).

[*Sturnella*] *ludoviciana* (not *Sturnus ludovicianus* Linnæus) SCLATER and SALVIN, Nom. Av. Neotr., 1873, 38, part.

*Sturnella ludoviciana* BOUCARD, Liste Ois. Guat., 1878, 36.

*Sturn[ella]* ———? SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 552, part (plateau region, Vera Cruz).

(?) *Sturnella magna alticola* NELSON, Auk, xvii, July, 1900, 266 (Ocuilapa, Chiapas; coll. U. S. Nat. Mus.).

<sup>1</sup> Two specimens.

Adult males from eastern and western Mexico, respectively, average as follows:

Locality.	Wing.	Tail.	Culmen, from base.	Tarsus.	Middle toe.
Six adult males from eastern Mexico .....	115.6	70.4	30.2	40.9	29.2
Five adult males from western Mexico .....	116.3	68.6	32	40.9	30.2
Five adults from Guatemala and Chiapas.....	111.8	68.8	31.5	40.9	28.7

<sup>2</sup> With the same material before me I can not satisfactorily make out Mr. Nelson's *S. m. alticola* (Auk, xvii, July, 1900, 266) as a sufficiently well-characterized subspecies. Mr. Nelson compares it primarily with *S. m. magna*, but I fail to understand his reason for doing so, its very close relationship to *S. m. mexicana* being obvious. The specimens from the highlands of Guatemala and Chiapas are not, however, in satisfactory plumage, and possibly I may be in error in uniting the supposed form to *S. m. mexicana*.

## STURNELLA MAGNA INEXPECTATA Ridgway.

## CENTRAL AMERICAN MEADOWLARK.

Similar to *S. m. mexicana*, but decidedly smaller; plumage of upper parts still more decidedly brownish; yellow of under parts clearer or purer.

*Adult male*.—Length (skins), 179.1–235.7 (199.9); wing, 94.7–111 (103.6); tail, 57.9–77.7 (67.8); culmen, from base, 27.4–32.5 (30.2); tarsus, 37.6–44.2 (38.4); middle toe, 27.9–31.2 (27.4).<sup>1</sup>

*Adult female*.—Length (skins), 170.4–216.7 (197.6); wing, 90.2–98.6 (94.5); tail, 58.9–67.3 (62); culmen, from base, 26.4–30.2 (28.5); tarsus, 35.6–39.1 (37.8); middle toe, 26.9–29.7 (27.9).<sup>2</sup>

Atlantic lowlands of southeastern Mexico, in States of Vera Cruz (Minatitlan) and Chiapas (Palenque), and southward through eastern Guatemala and Honduras (Segovia River) to Costa Rica and Veragua.<sup>3</sup>

*Sturnella ludoviciana* (not *Sturnus ludovicianus* LINNÆUS) SCLATER, Proc. Zool. Soc. Lond., 1856, 143 (David, Chiriqui).—TAYLOR, Ibis, 1860, 317 (Honduras).—SALVIN, Proc. Zool. Soc. Lond., 1870, 191 (Veragua); 1867, 142 (David, Chiriqui).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 104 (San José, Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 59 (Cartago, etc., Costa Rica).

*Sturnella hippocrepis* (not *Sturnus hippocrepis* Wagler) MOORE, Proc. Zool. Soc. Lond., 1859, 58 (near Belize, British Honduras, on pine ridges).

*Sturnella mexicana* (not of Sclater) LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 177 (David, Chiriqui).—SALVIN, Proc. Zool. Soc. Lond., 1867, 142 (Veragua).—ZELEDON, Cat. Aves de Costa Rica, 1882, 10.

[*Sturnella magna*] var. *mexicana* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 172, part.

*Sturnella magna mexicana* ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 112 (San José, Alajuela, Cartago, and Santa Ana, Costa Rica).—CHERRIE, Auk, vii, 1890, 334 (San José, Costa Rica); ix, 1892, 250 (San José).

[*Sturnella magna*.] c. Subsp. *mexicana* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 360, in list of specimens, part (localities in Costa Rica, Veragua, and Chiriqui)  
*Sturnella ludoviciana mexicana* SCLATER, Ibis, Jan., 1884, 26, part.  
*Sturn[ella]*———? SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 552, part (hot region, Vera Cruz).  
*Sturnella magna inexpectata* RIDGWAY, Proc. U. S. Nat. Mus., x, sig. 37, Aug. 6, 1888, 587 (Segovia River, Honduras; coll. U. S. Nat. Mus.).  
*S[turnella] magna inexpectata* STONE, Proc. Ac. Nat. Sci. Phila., 1897, 152.  
*Sturnella magna inexpectata* BANGS, Auk., xviii, 1901, 370 (David, Chiriqui).  
*Sturnella magna* (not *Alauda magna* Linnæus) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 358, part.—UNDERWOOD, Ibis, 1896, 437 (Volcan de Miravalles, Costa Rica).

STURNELLA NEGLECTA Audubon.

WESTERN MEADOWLARK.

Similar to *S. magna hoopesi*, but different in proportions, the wing averaging longer, the tail, tarsi, and toes shorter; coloration much grayer and more “broken” above, the broad lateral crown stripes never uniform black, but always (except in excessively worn plumage) more or less conspicuously streaked with pale grayish brown; malar region always largely yellow, usually including both anterior and extreme posterior portions; blackish streaks on sides and flanks varied with spots of pale grayish brown, the ground color of these parts paler buffy (often white, scarcely if at all tinged with buff); black jugular crescent averaging decidedly narrower.

*Adult male*.—Length (skins), 211.1–257.3 (232.7); wing, 118.4–129 (125); tail, 68.3–82.6 (75.7); culmen, from base, 29.7–36.6 (33.3); tarsus, 36.6–41.7 (38.9); middle toe, 25.4–28.5 (26.9).<sup>1</sup>

*Adult female*.—Length (skins), 196.6–228.6 (211.3); wing, 104.6–116.6 (110.7); tail, 60.7–72.1 (65.8); culmen, from base, 27.7–32.5 (30.5); tarsus, 33.5–37.6 (36.3); middle toe, 22.9–26.7 (25.1).<sup>2</sup>

<sup>1</sup> Twenty-three specimens.  
<sup>2</sup> Fourteen specimens.  
Specimens from east and west of Rocky Mountains average, respectively, as follows:

Locality.	Wing.	Tail.	Culmen, from base.	Tarsus.	Middle toe.
MALES.					
Eight adult males from east of Rocky Mountains (Minnesota to Texas) .....	126	77	32.5	38.6	26.9
Seven adult males from Great Basin and Arizona.....	125.7	75.9	34	38.6	26.7
Six adult males from west of Sierra Nevada and Cascades..	123.2	74.7	32.8	39.4	26.9
One adult male from Vancouver Island.....	128	72.6	34.8	38.6	27.7
One adult male from Cape St. Lucas .....	125.5	73.9	33.8	40.4	27.4
FEMALES.					
Three adult females from east of Rocky Mountains.....	110.2	66.3	29.2	36.8	25.9
Six adult females from Great Basin and Arizona.....	110.5	64.3	30.2	36.1	25.1
Four adult females from California .....	111.8	67.1	30.5		
One adult female from Cape St. Lucas .....	109.5	66			

I am not able to discern any variation of coloration in specimens from extreme parts of the range of the species in this respect.

Western United States, southwestern British Provinces, and north-western Mexico; east to prairie districts of Mississippi Valley, in Minnesota, Iowa, Missouri, Indian Territory, and Texas (occasionally to Illinois, Wisconsin, and southern Michigan<sup>1</sup>); north to southern British Columbia, southern Alberta, southwestern Saskatchewan, and western Manitoba; south over northern Mexico to States of Tamaulipas (Matamoros, etc.), Nuevo Leon, Coahuila, Guanajuato, Durango, Jalisco (Tonila), and Sinaloa (Mazatlan; Altata).<sup>2</sup>

*Sturnella ludoviciana* (not *Sturnus ludovicianus* Linnæus?) AUDUBON, Synopsis, 1839, 148, part—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 128 (c. Kansas), 157 (South Park, Colorado).

[*Sturnella*] *ludoviciana* SLATER and SALVIN, Nom. Av. Neotr., 1873, 38, part.

*Sturnella neglecta* AUDUBON, Birds Am., oct. ed., vii, 1843, 339, pl. 489 (upper Missouri R., above Fort Croghan).—WOODHOUSE, Rep. Sitgreaves' Expl. Zuni and Col. R., 1853, 78 (Indian Territory, Texas, New Mexico).—NEWBERRY, Rep. Pacific R. R. Surv., vi, 1857, 86 (Sacramento Valley, California).—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 331; Rep. Pacific R. R. Surv., ix, 1858, 537; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 19 (Matamoros, Tamaulipas, Coahuila, Espia, Sonora, San Elizario, Texas; Fort Yuma and San Diego, California); Cat. N. Am. Birds, 1859, no. 407. —KENNERLY, Rep. Pacific R. R. Surv., x, pt. iv, 1859, 31 (Texas, New Mexico, etc.).—HEERMANN, Rep. Pacific R. R. Surv., x, pt. vi, 1859, 54 (California).—XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 192 (Fort Tejon, California).—HENRY, Proc. Ac. Nat. Sci. Phila., 1859, 107 (New Mexico).—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 208 (California, Oregon; Washington).—SLATER, Ibis, 1861, 179. —DRESSER, Ibis, 1865, 492 (San Antonio, Texas, chiefly in winter).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1866, 23 (monogr.).—COTES, Proc. Ac. Nat. Sci. Phila., 1866, 91 (Fort Whipple, Arizona).—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 150 (Laredo, Texas; Oct., Nov.).—COOPER, Orn. Cal., 1870, 270.—TRIPPE, Proc. Bost. Soc. N. H., 1872, 239 (Decatur and Mahaska counties, Iowa, breeding; habits, notes; crit.).—SNOW, Birds Kansas, 1873, 8 (c. Kansas, abundant).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, pl. 34, fig. 1.—RIDGWAY, Orn. 40th Parallel, 1877, 506 (Sacramento, California, localities in Nevada and Utah, habits, song, etc.); Nom. N. Am. Birds, 1881, no. 204; Orn. Illinois, i, 1889, 317.—ALLEN (J. A.), Bull. Nutt. Orn. Club, iv, 1879, 124 (Ingham Co., Mich., Sept. 28 to Oct. 19).—McGEE, Bull. Nutt. Orn. Club, v, 1880, 53 (Chickasaw, Floyd, and Mitchell counties, n. e. Iowa, and Mower Co., s. e. Minnesota, May; intermediates said to have been observed).—ALLEN (C. N.), Bull. Nutt. Orn. Club, vi, 1881, 145 (song).—OGDEN, Sci. Proc. Roy. Dubl. Soc., iii, 1882, (46), (Navarro Co., Texas, resident).—BELDING, Proc. U. S. Nat. Mus., v, 1883, 531 (Cerritos I., Lower California); vi, 1883, 351 (La Paz, Lower California).

[*Sturnella*] *neglecta* BONAPARTE, Consp. Av., i, 1850, 429.

*Sturnella neglecta* COTES, Key N. Am. Birds, 2d ed., 1884, 406.

<sup>1</sup> Accidentally to Massachusetts (Bristol?).

<sup>2</sup> It is difficult, with the material examined (so many specimens being without dates), to determine how far southward in Mexico this species breeds. It certainly does breed entirely across the continent, from the coast of Texas (Corpus Christi, etc.) to the coast of California, in the same localities with *S. magna hoopesi*, both forms breeding on both sides of the United States-Mexican boundary line.

- Sturnella ludoviciana*, var. *neglecta* ALLEN, Bull. Mus. Comp. Zool., iii, July, 1872, 138 (Fort Hays, w. Kansas), 146 (Cheyenne, Wyoming), 150 (e. Colorado), 168 (Ogden, Utah), 178 (summary of localities); Proc. Bost. Soc. N. H., xvii, 1874, 46, 48, 60 (North Dakota and Montana; descr. eggs).
- Sturnella ludoviciana neglecta* SCLATER, Ibis, Jan., 1884, 25.
- Sturnella magna*, var. *neglecta* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 176.—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 281 (Mazatlan, Sinaloa).—RIDGWAY, Bull. Essex Inst., vii, 1875, 37 (Nevada).
- S[turnella] magna* var. *neglecta* NELSON, Bull. Essex Inst., viii, 1876, 111, 152 (n. e. Illinois, summer resid.).
- [*Sturnella magna*.] Var. *neglecta* COUES, Key N. Am. Birds, Oct., 1872, 157.—SNOW, Birds Kansas, 3d ed., 1875, 8.
- Sturnella magna* . . . var. *neglecta* COUES, Check List, 1873, no. 214a.—RIDGWAY, Bull. Essex Inst., v, Nov. 1873, 183 (Colorado).—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 317 (localities in Utah, Colorado, New Mexico, and Arizona; habits).
- [*Sturnella magna*] var. *neglecta* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, ii, 1874, 173.
- [*Sturnella magna*] b. *neglecta* COUES, Birds N. W., 1874, 190 (synonymy).
- Sturnella magna neglecta* RIDGWAY, Bull. Essex Inst., yii, Jan., 1875, 33 (Wahsatch Mts., Utah).—MCCAULEY, Bull. U. S. Geol. and Geog. Surv. Terr., iii, 1877, 668 (upper Red R. Valley, n. Texas; New Mexico; habits).—COUES, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 603 (Pembina, North Dakota, westward); Check List, 2d ed., 1882, no. 322.—MCCHESNEY, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 79 (Fort Sisseton, South Dakota, Apr. to Oct.).—GIBBS, Bull. U. S. Geol. and Geog. Surv. Terr., v, 1879, 488 (Michigan, rare).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 501a.—BRYANT (W. E.), Bull. Cal. Ac. Sci., no. 7, 1887, 293 (Guadalupe I., Lower California, 1 spec., Mar. 22.).—HANCOCK, Bull. Ridgw. Orn. Club, no. 2, 1887, 18 (Corpus Christi, Texas).—NELSON, Rep. Nat. Hist. Coll., Alaska, 1887, 169 (Sitka, Alaska, *fide* Lord).—KEYES and WILLIAMS, Proc. Davenp. Ac. Sci., v, 1888, 26 (Floyd Co., Iowa; more numerous than *S. magna*).—BECKHAM, Proc. U. S. Nat. Mus., x, 1888, 671 (Corpus Christi ?, Beeville ?, and San Antonio, Texas).—COOKE, Bird Migr. Miss. Val., 1888, 167 (localities, dates, etc.).—MEARNS, Auk, vii, 1890, 257 (Mogollon Mts., Arizona, breeding).—GOSS, Birds Kansas, 1891, 401 (common in w. and mid., rare in e., Kansas).—FANNIN, Check List Birds Brit. Col., 1891, 33 (both sides Cascade range; winters on Vancouver I.).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 573 (Manitoba localities; habits; song).—ATTWATER, Auk, ix, 1892, 237 (San Antonio, Texas, breeding).—LAWRENCE (R. H.), Auk, ix, 1892, 355 (Grays Harbor, Washington).—JOUY, Proc. U. S. Nat. Mus., xvi, 1894, 781 (s. Jalisco).—ANTHONY, Auk, xii, 1895, 140 (San Fernando, Lower California, winter).—WARREN (O. B.), Auk, xii, 1895, 192 (Marquette Co., Michigan, 1 spec., May 10).—MEAD, Auk, xii, 1895, 302 (Racine, Wisconsin).—BENDIRE, Life Hist. N. Am. Birds, ii, 1896, 462, pl. 6, figs. 23, 24 (eggs).—BELDING, Auk, xiii, 1896, 29 (songs); xv, 1898, 56 (do.).—GRINNELL, Publ. i, Pasadena Acad. Sci., 1897, 6 (Santa Barbara I., California), 16 (San Clemente I.).—(??) SCUDDER, Auk, xv, 1898, 333 (Bristol Co., Massachusetts, 1 spec., Apr. 9, 1898<sup>1</sup>).—LANTZ, Trans. Kansas Ac. Sci. for 1896–7 (1899), 222 (Altata, Sinaloa).—CARROLL, Auk, xvii, 1900, 345 (Refugio Co., Texas, winter resid.).
- [*Sturnella magna*] var. *neglecta* ALLEN, Bull. Nutt. Orn. Club, v, 1880, 52 (eastward range, etc.).

<sup>1</sup>Extremely doubtful. The specimen was not taken.

- S[turnella] magna neglecta* HENSHAW, Orn. Rep. Wheeler's Surv., 1879, 302 (e. base Sierra Nevada).—RIDGWAY, Man. N. Am. Birds, 1887, 372.  
*Sturnella ludoviciana neglecta* SCLATER, Ibis, 1884, 25 (monogr.).  
 [*Sturnella magna*] h. Subsp. *neglecta* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 360, in list of specimens (Vancouver I., San Juan I., etc.).  
*Sturnella hippocrepus* (not *Sturnus hippocrepis* Wagler) HEERMANN, Journ. Ac. Nat. Sci. Phila., 2d ser., ii, 1852, 269 (Suisun Valley, California).  
*Sturnella magna* (not *Alauda magna* Linnaeus) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 358, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 456, part (Coahuila; Espia; Mazatlan; Ciudad, Durango?).

## STURNELLA HIPPOCREPIS (Wagler).

## CUBAN MEADOWLARK.

Similar to *S. neglecta*, but decidedly smaller (except bill and feet) and coloration darker and browner above; malar region less extensively yellow; black jugular crescent narrower; flanks and under tail-coverts much more strongly buffy; anal region yellow, like abdomen, instead of white or very pale buff, like under tail-coverts.

*Adult male*.—Length (skins), 193.8–219.5 (208); wing, 96.5–107.2 (102.1); tail, 61.2–69.9 (65.8); culmen, from base, 31.5–34 (32.3); tarsus, 36.8–40.4 (38.6); middle toe, 26.2–28.7 (27.7).<sup>1</sup>

*Adult female*.—Length (skins), 186.7–215.1 (198.1); wing, 88.9–101.1 (98.7); tail, 53.1–67.8 (60.2); culmen, from base, 29.2–32.5 (30.7); tarsus, 35.1–39.4 (36.1); middle toe, 24.9–28.7 (25.9).<sup>2</sup>

Island of Cuba (including Isle of Pines), Greater Antilles.

*Sturnus hippocrepis* WAGLER, Isis, 1832, 281, in text (Cuba).

*Sturnella hippocrepis* CABANIS, Journ. für Orn., 1856, 14 (critical).—LAWRENCE, Ann. Lyc. N. Y., vii, 1860, 266 (crit.).—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307.—SCLATER, Ibis, 1861, 179 (Cuba); Cat. Am. Birds, 1862, 139



*Sturnella magna* (not *Alauda magna* Linnæus) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 358 (Cuba).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1887, 456, part (Cuba).

Genus DOLICHONYX Swainson.

*Dolichonyx* SWAINSON, Zool. Journ., iii, 1827, 351; Philos. Mag., new ser., i, June, 1827, 435. (Type, *Fringilla oryzivora* Linnæus.)

Small, semiterrestrial Icteridæ with short finch-like bill, acuminate rectrices, long tarsi, very long middle toe, and long slender claws; adult male black varied with buff and whitish in spring and summer; adult male in fall and winter, adult female at all seasons, and young brownish yellow, conspicuously streaked above.

Bill much shorter than head, conical, compressed, its basal depth greater than distance from nostril to tip of maxilla, its basal width nearly the same, or about equal to length of gonys; culmen nearly straight, but slightly convex terminally, the base elevated and more or less arched, the middle portion sometimes slightly depressed; gonys straight or very faintly convex, nearly equal to distance from nostril to tip of maxilla; maxillary tomium slightly concave terminally and subbasally, slightly convex in middle, the basal portion decidedly and rather abruptly deflexed from beneath posterior end of nostril to rictus; mandibular tomium straight or nearly so to near base where abruptly deflexed to the rictus. Nostril above lateral median line of the maxilla, rather large, oval, with distinct superior operculum, the feathering of the loreal antiæ extending beneath to about its middle. Wing long (about six and a half times as long as culmen, more than three and a half times as long as tarsus), with the tip much produced (longest primaries exceeding secondaries by more than length of tarsus), pointed; outermost (ninth) primary nearly or quite equal to eighth, sometimes longer; ninth, ninth and eighth, or eighth primaries longest, the seventh but little shorter; ninth and eighth (sometimes also the seventh) primaries with inner webs very slightly emarginated near tip, the termination of the broader portion forming, in adults, a more or less distinct tooth-like projection or point; longest tertial projecting decidedly beyond secondaries. Tail about two-thirds as long as wing, rounded, the rectrices rigid and with abruptly acuminate tips. Tarsus long (about one and three-fourths times as long as culmen), slender, its anterior scutella distinct; middle toe, with claw, longer than tarsus; claws of lateral toes falling decidedly short of base of middle claw; hallux about as long as lateral toes, stouter, its claw nearly or quite equal in length to the digit; all the claws very slender, acute, not strongly curved.

*Coloration*.—Adult male in spring and early summer black varied by a large buff or buffy whitish nuchal patch, the scapulars, rump, and upper tail-coverts white tinged with gray; adult male after summer

molt, adult female at all seasons, and young, brownish above, conspicuously streaked with black and buffy, brownish buffy or yellowish beneath.

*Range*.—Eastern and central temperate North America; West Indies and South America in winter. (Monotypic.)

**DOLICHONYX ORYZIVORUS (Linnaeus).**

**BOBOLINK.**

*Adult male in spring*.—General color black; hindneck buff; scapulars, rump, and upper tail-coverts white, more or less tinged with gray, especially the upper rump, which is sometimes uniform gray; inter-scapulars more or less edged with buff, forming streaks, especially along the median line; tertials and innermost greater wing-coverts margined with pale yellowish passing terminally into grayish brown; longer primaries narrowly edged with pale yellowish; inner webs of rectrices more or less broadly tipped with grayish; feathers of flanks and under tail-coverts more or less distinctly margined with buffy or whitish; thighs with feathers on outer side more broadly margined with buff; bill black; legs and feet dusky brownish; iris brown.

*Adult male in summer*.—Similar to the spring plumage, but nape white, or nearly so, and whitish or buffy margins to flank feathers and under tail-coverts almost absent, from abrasion.

*Adult female in spring*.—General color above light buffy olive; pileum with a broad median stripe of pale buffy olive or olive-buff, and two broad lateral stripes of black, the latter streaked with light buffy olive; back broadly streaked with black, the edges of some of the feathers light olive-buff, producing two nearly parallel narrow stripes when the plumage is properly arranged; rump feathers and upper tail

*Young, first fall and winter.*—Similar to (and not with certainty distinguishable from?) the adult female.

*Young, first plumage.*—Similar to the adult female, but “entire plumage, particularly below, of a more buffy color; there is a necklace of faint dusky spots across the breast, and the flank streaks are almost indistinguishable.”<sup>1</sup>

*Adult male.*—Length (skins), 160–188 (169.2); wing, 93.7–101.6 (97.5); tail, 62.7–68.6 (65.3); culmen, from base, 14.7–17.5 (15.5); depth of bill at base, 10.4–11.7 (10.9); tarsus, 26.4–28.5 (27.4); middle toe, 20.3–22.4 (21.3).<sup>2</sup>

*Adult female.*—Length (skins), 152.4–166.4 (158); wing, 85.1–89.7 (87.4); tail, 58.7–64.5 (61); culmen, from base, 14.5–15.5 (15); depth of bill at base, 9.7–10.7 (10.2); tarsus, 24.9–27.2 (25.9); middle toe, 18.5–21.1 (20.1).<sup>3</sup>

Eastern and central temperate North America; breeding from Pennsylvania, northwestern West Virginia (Fairview), central Ohio, central Indiana (south to Vigo, Tippecanoe, Clinton, Marion, Madison, Delaware, Wayne, and Union counties), northern Illinois, southern Iowa (Decatur and Mahaska counties), South Dakota, and Utah, northward to provinces of Quebec, Ontario, Manitoba, Assiniboia, and British Columbia (both sides of Cascade range), to about 40° on the Atlantic coast and 52° in the interior; west to Utah (Salt Lake and Utah valleys), northeastern Nevada (Ruby Valley), Idaho (St. Joseph River), and southeastern British Columbia (Chilliwack); during migration southward through West Indies (Bahamas, Cuba, Jamaica, Vieque, Sombrero, Barbados, Grenada), and the Atlantic coast of Central America (from Yucatan southward) to South America, as far as Paraguay, southern Brazil, Bolivia, etc.; also to the Galapagos Archipelago (James, Charles, and Chatham islands), and the Bermudas.

[*Fringilla*] *oryzivora* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 179 (based on *Avis arundinacea* Edwards, Gleanings Nat. Hist., 1758, pl. 291, smaller fig.).

<sup>1</sup> Chapman, The Auk, vi, 1890, 121. I have not been able to examine a specimen of the young in first plumage.

<sup>2</sup> Twenty specimens.

<sup>3</sup> Eight specimens.

Eastern and western specimens compare in average measurements as follows:

Locality.	Wing.	Tail.	Culmen, from base.	Depth of bill at base.	Tarsus.	Middle toe.
MALES.						
Ten adult males from Atlantic States.....	96.5	66	15.5	10.9	27.4	21.8
Ten adult males from west of Mississippi River...	98.3	65.5	15.5	10.9	27.4	21.8
FEMALES.						
Five adult females from Atlantic States .....	87.1	61.5	15	10.2	25.4	19.6
Three adult females from west of Mississippi River.	87.9	59.9	15	10.4	26.7	20.8

- [*Emberiza*] *oryzivora* LINNÆUS, *Syst. Nat.*, ed. 12, i, 1766, 311.—GMELIN, *Syst. Nat.*, i, 1788, 880.—LATHAM, *Index Orn.*, i, 1790, 408.
- Emberiza oryzivora* WILSON, *Am. Orn.*, ii, 1810, 48, pl. 12, figs. 1, 2.
- Dolichonyx oryzivorus* SWAINSON, *Zool. Journ.*, iii, 1827, 351; *Philos. Mag. n. s.*, i, 1827, 435 (tableland of Mexico).—SWAINSON and RICHARDSON, *Fauna Ber.-Am.*, ii, 1831, 278.—BONAPARTE, *Geog. and Comp. List*, 1838, 29.—AUDUBON, *Birds Am.*, oct. ed., iv, 1842, 10, pl. 211.—GOULD, in Darwin's *Zool. Voy. "Beagle,"* iii, 1841, 106 (James I., Galapagos).—GOSSE, *Birds Jamaica*, 1847, 229.—HUMPHRIS, *Jardine's Contr. Orn.*, 1850, 8 (Bermudas, autumn).—WOODHOUSE, in *Rep. Sitgreaves' Expl. Zuffi and Col. R.*, 1853, 81 (Indian Territory; Texas).—CABANIS, *Journ. für Orn.*, iv, 1856, 11 (Cuba).—BAIRD, *Rep. Pacific R. R. Surv.*, ix, 1858, 522, 927 (Fort Bridger, Wyoming); *Cat. N. Am. Birds*, 1859, no. 399.—MAXIMILIAN, *Journ. für Orn.*, 1858, 266 (upper Missouri R.).—SCLATER, *Proc. Zool. Soc. Lond.*, 1858, 72 (Rio Napo, e. Ecuador); 1861, 74 (Jamaica); *Ibis*, 1864, 2 (monogr.); *Cat. Birds Brit. Mus.*, xi, 1866, 331 (Nevis, Lesser Antilles; Cozumel I.; n. Yucatan; British Honduras; Chepo and Paraiso Station, Isthmus of Panama; Santa Marta and Bogota, Colombia; Caracas, Venezuela; Camacusa, British Guiana; Cayenne; Rio Javari, upper Amazon, etc.).—BREWER, *Proc. Bost. Soc. N. H.*, vii, 1860, 307 (Cuba).—ALBRECHT, *Journ. für Orn.*, 1862, 197 (Jamaica).—LAWRENCE, *Ann. Lyc. N. Y.*, viii, 1864, 99 (Sombbrero, W. I.); *Proc. U. S. Nat. Mus.*, ix, 1886, 616 (Grenada).—CAMMIN, *Proc. Ac. Nat. Sci. Phila.*, 1866, 15 (monogr.; Rio Negro; La Plata; Rio Napo, e. Ecuador; Cuba; Jamaica).—SALVIN, *Ibis*, 1864, 386 (Lighthouse Reef, etc., British Honduras); 1866, 194 (Belize, British Honduras); 1865, 191 (Cozumel I.), 218 (British Guiana); *Trans. Zool. Soc. Lond.*, ix, pt. ix, 1876, 491 (James I., Galapagos).—COOPER, *Am. Nat.*, iii, 1869, 78 (Montana); *Orn. Cal.*, 1870, 255 (Ruby Valley, Nevada).—PELZELN, *Orn. Bras.*, 1871, 199 (Matto Grosso).—SCLATER and SALVIN, *Proc. Zool. Soc. Lond.*, 1870, 781 (Merida, Venezuela); 1876, 16 (Pauartambo, Peru); 1879, 509 (Medellin, Colombia).—TRIPPE, *Proc. Bost. Soc. N. H.*, xv, 1872, 238 (Deratur and Mahaska counties, s. Iowa, breeding; habits).—ALLEN, *Bull. Mus. Comp. Zool.*, iii, 1872, 168, 178 (Ogden, Utah, breeding?); *Proc. Bost. Soc. N. H.*, xvii, 1874, 59 (bet. Missouri and Yellowstone rivers, Montana); *Bull. Am. Mus. N. H.*, i, 1880, 34 (Lansing, Michigan); 1881, 379 (Michigan).

- erences); vi, 1889, 31 (Little Cayman); viii, 1891, 351, 352 (Inagua, Anguilla, and Cay Sal, Bahamas); Birds W. I., 1889, 107; Cat. W. I. Birds, 1892, 110 (New Providence, Watlings, Gt. Inagua, Cay Sal, and Anguilla, Bahamas; Cuba, Isle of Pines, Grand Cayman, Little Cayman, Cayman Brac, Jamaica, and Vieque, Greater Antilles; Grenada and Barbados, Lesser Antilles).—MAYNARD, Birds E. N. Am., 1881, 129.—ALLEN and BREWSTER, Bull. Nutt. Orn. Club, viii, 1883, 192 (Colorado Springs, Colorado, May 18–23).—BICKNELL, Auk, ii, 1885, 152 (song).—AGERSBORG, Auk, ii, 1885, 282 (s. e. South Dakota, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 494.—TACZANOWSKI, Orn. du Pérou, ii, 1885, 421.—SALVIN and GODMAN, Biol. Centr.-Am. Aves, i, 1886, 448.—BERLEPSCH, Journ. für. Orn., 1887, 116 (Paraguay); 1889, 3 (Tonantins, prov. Solimoes, n. w. Brazil, May 6).—KEYES and WILLIAMS, Proc. Davenp. Ac. Nat. Sci., v, 1888, 24 (breeding in centr. and n. Iowa).—COOKE, Bird Migr. Miss. Val., 1888, 160 (dates, etc.); Birds Colorado, 1897, 93 (summer resid. e. of mountains); Bull. Col. Agric. Coll., no. 4, 1898, 163 (Denver, June; Colorado Springs, Sept. 5).—CHAPMAN, Auk, vii, 1890, 39 (winter range and migration routes), 120 (changes of plumage); x, 1893, 309, pl. 7 (changes of plumage).—RIVES, Cat. Birds Virginias, 1890, 69 (Fairview, West Virginia, breeding).—SMITH (R. W.), Journ. Cinc. Soc. N. H., 1891, 118 (Greene Co., s. w. Ohio, breeding).—BERLEPSCH and STOLZMANN, Proc. Zool. Soc. Lond., 1892, 378 (Ica, Peru, Nov., Dec.).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 496 (Rio Escondido, Nicaragua, Aug. to Oct.).—SCOTT, Auk, x, 1893, 178 (Jamaica, Oct. to Apr.).—SKILLEN, Auk, xi, 1894, 180 (changes of plumage).—RICHMOND and KNOWLTON, Auk, xi, 1894, 305 (Gallatin Valley, Montana, Aug., abundant).—ULREY and WALLACE, Proc. Ind. Ac. Sci., 1895, 153 (Wabash, Indiana, breeding).—BENDIRE, Life Hist. N. Am. Birds, ii, 1895, 429, pl. 6, figs. 1, 2 (eggs).—BUTLER, Proc. Ind. Ac. Sci., 1896, 227 (breeding south to Vigo, Boone, Marion, and Decatur counties, Indiana); Birds Indiana, 1897, 886 (breeding south to Vigo, Tippecanoe, Clinton, Marion, Madison, Delaware, Wayne, and Union counties).—OBERHOLSER, Bull. Ohio Agric. Station, tech. ser., i, no. 4, 1896, 301 (Wayne Co., n. e. Ohio, abt. summer resid.).—NEHRLING, Our Native Birds, etc., ii, 1896, 235, pl. 29, figs. 1, 2.—HADLEY, Proc. Ind. Ac. Sci., 1897, 188 (Richmond, Wayne Co., Indiana, breeding).—MERRILL, Auk, xv, 1898, 14 (St. Joseph R., Idaho, breeding).—RHODES, Auk, xvi, 1899, 312 (breeding in s. w. counties of Pennsylvania).—ROTHSCHILD and HARTERT, Novit. Zool., vi, 1890, 171 (James, Charles, and Chatham islands, Galapagos).—FLEMING, Auk, xviii, 1901, 40 (Elmsdale and Beaumaris, n. Ontario, May to Aug.).
- [*Dolichonyx*] *oryzivorus* COUES, Key N. Am. Birds, 1872, 155.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 37.—CORY, List Birds W. I., 1885, 14.
- D[olichonyx]* *oryzivorus* CABANIS, Mus. Hein., i, 1851, 187.—NELSON, Bull. Essex Inst., viii, 1876, 111, 152 (n. e. Illinois, breeding).—NEWTON (A. and E.), Handb. Jamaica, 1881, 104.—COUES, Key N. Am. Birds, 2d ed., 1884, 400.—RIDGWAY, Man. N. Am. Birds, 1887, 366.
- Dolichonyx orizivorus* JARDINE, Contr. Orn., 1848, 83 (Bermudas, autumn).—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 299 (Jamaica).
- [*Dolichonyx*] *oryzivora* BONAPARTE, Consp. Av., i, 1850, 437.
- Dolichonyx oryzivora* AUDUBON, Synopsis, 1839, 138.—WILLIS, Ann. Rep. Smiths. Inst. for 1858 (1859), 287 (Bermudas).—SCLATER, Cat. Am. Birds, 1862, 134 (Santa Marta, Colombia; Bolivia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1876, 16 (Paucartambo, high Peru).—ZELEDON, Cat. Aves de Costa Rica, 1882, 10.
- Dolichonix oryzivora* LEMBEYE, Aves de la Isla de Cuba, 1850, 57.
- Dolichonyx orizivora* BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 119 (New Providence, Bahamas, May).

- Icterus agripennis* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1825, 48; Ann. Lyc. N. Y., ii, 1828, 53.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 185.—AUDUBON, Orn. Biog., i, 1831, 283, pl. 54; v, 1839, 486.
- Dolichonyx agripennis* RICHARDSON, Rep. Brit. Assoc. Adv. Sci., 1837, 176.
- Ps[arocolius] cauducutus* WAGLER, Syst. Av., 1827, 32.
- Dolichonyx oryzivorus*, var. *albinucha* RIDGWAY, Bull. Essex Inst., v, Nov., 1873, 192 ("Missouri plains and Rocky Mountains, west to Ruby Valley, Nevada; Salt Lake Valley"); v, Dec. 1873, 198<sup>1</sup> (Ogden, Utah; coll. U. S. Nat. Mus.).
- [*Dolichonyx oryzivorus*] var. *albinucha* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, iii, 1874, 517, in text (characters).
- Dolichonyx oryzivorus* . . . *β. albinucha* RIDGWAY, Orn. 40th Parallel, 1877, 500 (Ruby Valley, Nevada, Aug.; Salt Lake Valley, Utah, May; etc.).
- Dolichonyx oryzivorus albinucha* AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 494a.—SETON, Auk, iii, 1886, 321 (w. Manitoba, breeding).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1891, 571 (range in Manitoba; habits).
- [*olichonyx*] *oryzivorus albinucha* RIDGWAY, Man. N. Am. Birds, 1887, 366.
- Dolichonyx oryzivora albinucha* BROOKS, Auk, xvii, 1900, 106 (British Columbia, breeding on both sides of Cascade Range).

### Family CEREVIDÆ.

#### THE HONEY CREEPERS.

Small slender-, acute-, or hook-billed "nine-primaried" acutiplantar Oscines with the tongue deeply incised (bifid or trifid) and fringed or brushy at tip; transpalatine processes much reduced, forming minute spikes or points; interpalatine spur abortive, or small; palatines produced backward over pterygoids.<sup>3</sup>

Bill very variable in shape and relative length; sometimes rather stout and bent wedge-shaped (i. e., the culmen decidedly convex, but gonys straight); sometimes slender, slightly decurved terminally, and as long as or longer than head (*Chlorophanes*; *Cyanerpes*); sometimes

tarsi, with the posterior face smooth, and with indications of several scutes more or less obsolete on the anterior face. The wings are of moderate length, without any indication of the first or external primary, and with the second, third, and fourth primaries usually nearly equal and longest. The bill is small and slender and without any notch at the extremity of the upper mandible, but varies in structure . . . The tongue is penciled at the extremity.”<sup>1</sup>

It is at present not possible to give a satisfactory diagnosis of the Family Cœrebidæ since the internal structure of more than half the genera remains practically unknown. What little is known of the anatomical characters of the group pertains to the genera *Cyanerpes*, *Cœreba*, and *Glossiptila*; and since these may be regarded as the central or most typical forms of the group, any conclusions based on them alone would be more or less open to doubt; at least until the internal structure of such forms as *Conirostrum*, *Diglossa*, *Oreomanes*, and *Xenodacnis* is known, the limits of the group can not be fixed with precision, nor its relationships satisfactorily determined.

The limits of the family, as defined by Dr. Sclater,<sup>2</sup> have already been restricted by the elimination of the genus *Certhidea*, which Mr. Lucas, by examination of its osteology and anatomy, has found to be certainly not Cœrebine, but probably Mniotiltine;<sup>3</sup> and it is by no means improbable that further contraction may ultimately be required.

So far as the typical genera, *Cœreba*, *Glossiptila*, and *Cyanerpes* are concerned, Mr. Lucas finds them to represent a well-circumscribed group, of uncertain affinities, though apparently more nearly related to the Australasian family Meliphagidæ (Honey-eaters) than to the American families Mniotiltidæ and Tanagridæ, usually held to be the nearest relatives of the Cœrebidæ. The gist of Mr. Lucas's conclusions<sup>4</sup> is as follows:

(1) “As groups of birds are constituted the Cœrebidæ are certainly sufficiently distinct to stand apart, and the gap between them and the Mniotiltidæ seems widest,<sup>5</sup> although this may be due to a tendency on my part to place considerable weight on the general pattern of the palate.”

<sup>1</sup> Sclater, Cat. Birds Brit. Mus., xi, 1886, 1.

<sup>2</sup> Cat. Birds, Brit. Mus., xi, 1886, xi.

<sup>3</sup> Proc. U. S. Nat. Mus., xvii, 1894, 309, 310.

<sup>4</sup> Notes on the Anatomy and Affinities of the Cœrebidæ and other American Birds, by Frederic A. Lucas, Curator of the Department of Comparative Anatomy. Proc. U. S. Nat. Mus., xvii, 1894, 299–312; illustrated by many figures.

<sup>5</sup> It would be interesting to know whether Mr. Lucas's conclusions on this point would have been modified by examination of *Conirostrum* and *Ateleodacnis*, genera which have hitherto been referred to the Cœrebidæ (the latter forming part of the genus *Dacnis*) but which I have found it necessary to refer to the Mniotiltidæ. Possibly, as in the case of another supposedly Cœrebine, but in reality Mniotiltine, genus (*Certhidea*), the gap between the two groups would have been emphasized. (See Lucas: The Anatomy and Affinities of *Certhidea*, Proc. U. S. Nat. Mus., xvii, 1894, 309, 310.)

(2) "That the members of the Cœrebidæ do not form a homogeneous group, but contains at least three well-marked types."

Leaving out the genera *Diglossa*, *Diglossopsis*, *Dacnides*, *Atelodactylus*, *Oreomanes*,<sup>1</sup> and *Comirostrum*, whose internal structure has not, to my knowledge, been investigated, it is obvious from Mr. Lucas's observations that the remaining Cœrebidæ comprise three quite distinct groups, whose distinctive characters are as follows:

- a. Crop small or absent; tongue bifid; dorsal pterygia broader; feathers shorter, more compact.
- b. Crop present but small, tongue fringed; intestinal convolutions simple.  
Chlorophanes, Cyanerpes, Dacnis.
- bb. Crop absent; tongue brushy; intestinal convolutions extremely complicated.  
Cœreba.
- aa. Crop well developed; tongue trifid; dorsal pterygia narrower; feathers longer, looser ..... Glossiptila.

"In their tongue," says Mr. Lucas, "the Cœrebidæ are markedly different from the Mniotiltidæ, but it is largely a difference of degree rather than of kind. They differ in toto from the Tanagridæ, are quite distinct from the Drepanidæ, and find their nearest relatives in *Acanthorhynchus*.<sup>2</sup> -

"The relationship with the tanagers is not very close, although such short-billed forms as *Chlorophanes*<sup>3</sup> and *Dacnis*, which unfortunately were not available, might bring the two groups a little closer.

"In size, form, pterylosis, structure of tongue, and pattern of convolutions of alimentary canal, there is a strong resemblance between *Cœreba* [i. e., *Cyanerpes*] and *Acanthorhynchus* [Meliphagidæ], and so far the two forms exhibit a most interesting case of parallelism. The palate, too, on superficial examination looks not unlike that of *Glossiptila*. . .



decided crop, and unique trifold tongue, is equally well characterized, and certainly should stand apart, seeming to hold with respect to *Cæreba* [*Cyanerpes*] much the same position that *Chamaea* does with the wrens."<sup>1</sup>

Even after removing the genera *Conirostrum* and *Ateleodacnis*,<sup>2</sup> I am very doubtful as to the naturalness of the group known as the Cœrebidæ; but until the internal structure of *Diglossa*, *Diglossopsis*, *Chlorophanes*, *Dacnis*, *Hemidacnis*, and *Oreomanes* shall have been sufficiently investigated, any further change in the limits of the supposed family would be premature. I have been strongly tempted to separate, as a distinct family, the genera *Diglossa* and *Diglossopsis*, on account of the peculiar and very remarkable modification of the basal portion of the mandible, these two genera differing from all other Cœrebidæ in having the gonydeal angle decidedly posterior to the nostril—a character quite unique, so far as I am at present aware, in the Order Passeriformes, or at least the Suborder Oscines.

The Honey-Creepers, or Guit-Guits, are peculiar to the forest-clad regions of tropical America, the family, like so many other Neotropical groups, being most developed in the basin of the Amazon and adjacent parts of Colombia and Ecuador. One genus (*Cæreba*) is most numerous represented in the West Indies, where almost every island possesses its peculiar form. One genus (*Glossiptila*), the representative of a distinct subfamily (Glossiptilinae) is peculiar to Jamaica. Altogether about seventy-five species and eleven genera are recognized, of which six genera, but only about twenty-five species, occur within the geographic field of this work.

#### KEY TO THE GENERA OF CÆREBIDÆ.

- a. Bill much compressed, with tip of maxilla abruptly hooked or uncinate; mandibular rami very short, the gonydeal angle decidedly posterior to the nostril. **Diglossa** (p. 378)
- aa. Bill not much compressed; tip of maxilla not abruptly hooked or uncinate; mandibular rami of normal length, the gonydeal angle anterior to the nostril.
  - b. Exposed culmen equal to or longer than tarsus; bill more subulate, the tip obtuse; maxillary tomium more or less obviously notched subterminally.
  - c. Outermost (ninth) primary shorter than sixth; wing-tip not longer than tarsus, the latter longer than middle toe with claw; adult males glossy green with pileum and sides of head black;<sup>3</sup> adult females duller in color, without black on head ..... **Chlorophanes** (p. 382)

<sup>1</sup> Proc. U. S. Nat. Mus., xvii, 309.

<sup>2</sup> These two genera, both of which are peculiarly South American, and therefore extra-limital to the present work, I have been obliged to remove from the Cœrebidæ and transfer to the Mniotiltidæ, or else, as the only alternative, combine the two families into one, the birds of these two genera being, so far as external characters are concerned, quite inseparable from the last-named group. Unfortunately, their anatomical structure has not been investigated; but I believe that when this has been done it will be found that they too, like another supposedly Cœrebine genus (*Certhidea*) possess the Mniotiltine type of tongue and palate. (See Lucas: "The Anatomy and Affinities of *Certhidea*," in Proc. U. S. Nat. Mus., xvii, 1894, 309, 310.)

<sup>3</sup> A South American species (*C. purpurascens*) is violet-blue with blackish wings and tail but without black pileum; the adult female unknown.

- cc. Outermost primary longer than sixth; wing-tip nearly twice as long as tarsus, the latter shorter than middle toe with claw; bill more slender; adult males rich blue with wings and tail, together with throat or back, black; adult females plain greenish above, beneath paler and more yellowish, more or less streaked with darker ..... *Cyanerpes* (p. 384)
- bb. Exposed culmen shorter than tarsus; bill more conical (or bent wedge-shaped) with tip acute.
- c. Outermost primary equal to or longer than sixth; tarsus slightly longer than middle toe with claw; adult males blue and black or yellow and black; females much duller in color, without black areas ..... *Dacnis* (p. 390)
- cc. Outermost primary shorter than sixth; tarsus much longer than middle toe with claw; adult males neither blue and black nor yellow and black.
- d. Bill more slender, strongly decurved terminally (the gonys more or less concave); commissure as long as middle toe with claw; tail rounded; under parts white and yellow or gray and yellow, or else whole plumage black (sexes alike in color) ..... *Coroba* (p. 397)
- dd. Bill stouter, not decurved terminally (the gonys straight); commissure shorter than middle toe with claw; tail even or slightly emarginate; adult male dull grayish blue with rufous throat-patch; female brownish above, paler beneath ..... *Glossiptila* (p. 423)

## Genus DIGLOSSA Wagler.

*Diglossa* WAGLER, *Ibis*, 1832, 280. (Type, *D. baritula* Wagler.)

*Agrilorhinus* BONAPARTE, *Nuovi Ann. Sc. Nat. Bologna*, i, 1838, 408. (Type, *A. siltaceus* Bonaparte, = *Diglossa baritula* Wagler.)

*Ancylorhinus* (emendation) SCLATER, *Ibis*, 1875 204 (ex *Agrilorhinus* Bonaparte).

*Serrirostrum* LAFRESNAYE and D'ORBIGNY, *Mag. de Zool.*, 1838 (*Synopsis Avium*, ii, p. 24). (Type, *S. carbonarium* Lafresnaye and D'Orbigny.)

*Uncirostrum* LAFRESNAYE, *Rev. Zool.*, 1839, 100. (Type, *Serrirostrum carbonarium* Lafresnaye and D'Orbigny.)

*Campylops* LICHTENSTEIN, *Nomencl. Av. Mus. Berol.*, 1854, 56. (Type, *C. hamulus* Lichtenstein, = *Diglossa baritula* Wagler.)

*Tupia diglossa* (LAFRESNAYE), *Proc. Ac. Nat. Sci. Phila.*, xii, No. 1861, 273. (Type,

or less distinct subterminal tomial notch; maxillary tomium, posterior to the subterminal notch, nearly or quite straight to near the base, where more or less convex; mandible recurved, falcate, with very acute tip and very short rami, the gonys strongly convex, its base very broad and much posterior to the nostrils. Nostrils exposed, narrow, longitudinal, overhung by broad membrane. Rictal bristles rather long but weak. Wing moderate, rather rounded (seventh and sixth, or seventh, sixth, and fifth primaries longest, the ninth shorter than fourth, sometimes shorter than first). Tail decidedly shorter than wing (sometimes shorter than distance from bend of wing to tip of secondaries), more or less rounded or slightly double-rounded. Tarsus rather long (nearly one-third to more than one-third as long as wing); middle toe with claw decidedly shorter than tarsus.

*Coloration*.—Adult males (also adult females of some species) usually plain bluish or blackish, the under parts sometimes partly rufous or chestnut; if the general color bluish, the forehead and lores (sometimes auriculars also) black; if the general color black, the lesser wing-coverts usually bluish gray or white.

*Range*.—Southern Mexico to Colombia and thence through mountains of western South America to Peru and Bolivia. (Only two species north of Panama.)

Not having seen all the species of this genus, I am not able to form an opinion respecting its proper limits.<sup>1</sup> Judging from the species that have been examined, however, I am inclined to believe that it will be necessary either to merge the generally accepted genus *Diglossopsis*<sup>2</sup> into *Diglossa*, or else to recognize one or more additional genera, to include species which are intermediate in structural characters or differ in certain respects from both types. In *Diglossopsis* the modifications of the bill which are so remarkable in typical *Diglossa* are not carried nearly so far; the tip of the maxilla is but faintly hooked; the general trend of the bill is more nearly on a line with the longitudinal axis of the head; the exposed culmen is nearly as long as the lateral length of the mandible (instead of being much shorter—sometimes less than two-thirds as long), and the inferior outline of the mandible is but slightly convex. The nasal fossæ are also much more exposed, the latero-frontal feathering encroaching much more upon the nostrils in *Diglossa*. Some of the species referred to *Diglossa*, as, for example, *D. personata*, are in the particulars mentioned almost exactly intermediate between typical *Diglossa* and *Diglossopsis*, though there seems to be rather more of a gap between these intermediate forms and *Diglossopsis* than between the former and true *Diglossa*.

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<sup>1</sup>The species which I have not seen are *D. gloriosa*, *D. pectoralis*, *D. mystacalis*, *D. carbonaria*, and *D. glauca*.

<sup>2</sup>*Diglossopsis* Sclater, Ann. and Mag. Nat. Hist., ser. 2, xvii, 1856, 467. (Type, *D. caerulea* Sclater.)

## KEY TO THE SPECIES OF DIGLOSSA.

- a. Bluish gray above (darker on pileum). (Adult males.)
  - b. Under parts of body cinnamon or cinnamon-rufous. (Southern Mexico; Guatemala.) ..... *Diglossa baritula*, adult male (p. 380)
  - bb. Under parts of body slate-gray. (Costa Rica; Veragua.)  
*Diglossa plumbea*, adult male (p. 381)
- aa. Olive or olive-grayish above. (Adult females and young.)
  - b. Under parts buffy or cinnamon-buffy (tinged with olive laterally).  
*Diglossa baritula*, adult female and young male (p. 380)
  - bb. Under parts pale olive, light grayish olive, or olive-grayish.  
*Diglossa plumbea*, adult female and young male (p. 381)

## DIGLOSSA BARITULA Wagler.

## MEXICAN DIGLOSSA.

*Adult male*.—Head and neck, except throat, blackish slate or slate-blackish, darker (nearly black) on forehead and lores, more grayish on sides of neck; back, scapulars, rump, upper tail-coverts, and lesser wing-coverts plain slate color anteriorly, passing into slate-gray posteriorly; wings and tail dusky with slate-gray edgings, the middle wing-coverts broadly margined with slate-gray; lower throat, under parts of body, under tail-coverts, axillars, and under wing-coverts plain rufous-cinnamon or russet; maxilla brownish black, mandible blackish terminally and on terminal half of gonys, otherwise pale brownish or brownish white (in dried skins); legs and feet horn brownish (in dried skins); length (skins), 100.1–109 (105.2); wing, 55.1–58.7 (57.2); tail, 42.2–46.7 (45); exposed culmen, 9.4–10.7 (9.9); tarsus, 16–18 (17.3); middle toe, 9.9–11.4 (10.9).<sup>1</sup>

*Adult female*.—Above, including sides of head and neck, plain olive,

(Patzcuaro), Guerrero (Chilpancingo), and Oaxaca (Mount Zampoaltepec); Guatemala.<sup>1</sup>

*Diglossa baritula* WAGLER, Isis, 1832, 281 (Mexico; coll. Würzburg Mus.).—HAHN, Orn. Atlas, xii, 1834–36, pls. 1, 2.—HARTLAUB, Rev. Zool., 1842, 56.—BONAPARTE, Consp. Av., i, 1850, 401.—REICHENBACH, Handb., ii, 1853, 233, pl. 554, figs. 3762–3763.—SCLATER, Proc. Zool. Soc. Lond., 1856, 286 (Cordova, Vera Cruz); 1859, 364 (Jalapa, Vera Cruz), 376 (Juquila and Totontepec, Oaxaca); 1864, 173 (valley of Mexico); Cat. Am. Birds, 1862, 48 (Jalapa; Guatemala); Ibis, 1875, 207 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 3 (near City of Mexico; Jalapa; Quesaltenango, Calderas, Coban, and Santa Cruz Mts., Guatemala).—SCLATER and SALVIN, Ibis, 1859, 14 (Guatemala).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 273 (monogr.).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 548 (alpine region, Vera Cruz).—DUGÈS, La Nature, i, 1869, 140 (Guanajuato, Mexico).—SALVIN, Cat. Strickland Coll., 1882, 174 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 242.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 140 (San Salvador el Verde and Huejotringo Puebla).

*D[iglossa] baritula* GRAY, Gen. Birds, i, 1846, 157, pl. 42.—CABANIS, Mus. Hein., i, 1850, 97 (Mexico).

[*Diglossa*] *baritula* GRAY, Hand-list, i, 1869, 118, no. 1474.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 15.

*Agrilorhinus sittaceus* BONAPARTE, Nuov. Ann. Scienz. Nat. Bologna, i, 1838, 408 (Mexico; coll. Florence Mus.).—LAFRESNAYE, Rev. Zool., Oct., 1839, 292, in text.

*Uncir[ostrum] sittaceum* LAFRESNAYE, Rev. Zool., Oct., 1839, 292, in text.

*Uncirostrum brelayi* LAFRESNAYE, Rev. Zool., 1839, 100 (Mexico; coll. Charles Brelay).

*Agrilorhinus olivaceus* FRASER, Proc. Zool. Soc. Lond., 1840, 22 (Mexico?; type in Brit. Mus.).

### DIGLOSSA PLUMBEA Cabanis.

#### COSTA RICAN DIGLOSSA.

*Adult male*.—Above plain deep bluish slate color, darker (bluish slate-black) on pileum, paler (bluish slate-gray or deep plumbeous) on rump; remiges and rectrices black with bluish slate-gray edgings; lores black; sides of head otherwise like pileum, but rather darker; under parts plain slate-gray, paler on abdomen; maxilla brownish black; mandible light brownish basally, dusky terminally; legs and feet horn brownish (in dried skins); iris brown; length (skins), 105.4–110.2 (107.7); wing, 53.8–55.4 (54.9); tail, 39.6–44.5 (42.7); exposed culmen, 9.9–10.7 (10.2); tarsus, 17.5–18.8 (18); middle toe, 11.2–12.2 (11.4).<sup>2</sup>

*Adult female*.—Above deep olive-gray or grayish olive, the rump more grayish; under parts deep olive-grayish, paler and tinged with

<sup>1</sup> The single Guatemalan specimen, an adult male, differs decidedly from all the adult males from Mexico (eleven in number) in having the entire throat slate-gray and the axillars and under wing-coverts pale buffy or rusty whitish instead of being of the same deep rufous-cinnamon color or russet as the under parts. According to Dr. Sclater, however, "Guatemalan specimens have less plumbeous on the throat, thereby approaching *D. sittoides*." Evidently, therefore, Guatemalan specimens require careful comparison with Mexican examples.

<sup>2</sup> Four specimens.

buffy on chin, the abdomen dull buffy whitish; bill and feet as in adult male; length (skin), 100.6; wing, 52.8; tail, 39.1; exposed culmen, 10.4; tarsus, 17.3; middle toe, 11.4.<sup>1</sup>

*Young (both sexes).*—Above plain olive; beneath paler olive.

Highlands of Costa Rica and Chiriqui.

*Diglossa plumbea* CABANIS, Journ. für Orn., viii, Nov., 1860, 411 (Costa Rica; coll. Berlin Mus.).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 275 (monogr.).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 97 (San Juan and Quebrada Honda, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 297 (Irazú, San Juan, and Candelaria, Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 185 (Volcan de Chiriqui, Chiriqui).—SCLATER, Ibis, 1875, 217 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 9.—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Cartago, Navarro, Naranjo, Volcan de Irazú, and La Laguna, Costa Rica, 4,000–8,000 ft.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 243, pl. 15a, figs. 1, 2.—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 108 (Volcan de Irazú).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 529 (descr. young).

[*Diglossa*] *plumbea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 15.

#### Genus CHLOROPHANES Reichenbach.

*Chlorophanes* REICHENBACH, Handb. d. sp. Orn., i, 1853, 233. (Type, *Cereba atricapilla* Vieillot, = *Certhia spiza* Linnaeus.)

Rather large Cerebidae with the bill as long as or longer than head, slightly decurved terminally, the maxillary tomium more or less distinctly notched subterminally; adult males glossy green, with pileum and sides of head black; or if violet-blue, the pileum also blue.

Bill about as long as head, or a little longer, narrow, gradually tapering and slightly decurved terminally; culmen straight or nearly so for

*Range*.—Guatemala to southern Brazil and Bolivia. (Two species.)

This genus contains, so far as known, only two species. One of these, *C. purpurascens* Sclater and Salvin, is of very restricted range, being confined to Venezuela; the other occupies almost the entire area of continental tropical America, or from Guatemala to southern Brazil and Bolivia. In various parts of this extensive range it has become differentiated into an undetermined number of geographic forms or subspecies, only one of which, however, occurs within the limits of the present work. The adult male of *C. purpurascens* differs from that of *C. spiza* (in all its forms) in having the pileum mainly blue instead of uniform black, and in having the general color purplish blue instead of green. The female and young are unknown. The Central American form of *C. spiza* is larger and of a less bluish green color than its South American representatives.

### CHLOROPHANES SPIZA GUATEMALENSIS (Sclater).

#### NORTHERN GREEN HONEY CREEPER.

Similar to *C. s. spiza*, but larger (especially the bill), and adult male with green of under parts less bluish.

*Adult male*.—Pileum, sides of head (down to and including malar region), and chin, deep black; rest of plumage very glossy viridian green, more bluish in some lights; alula, primary-coverts, primaries, and rectrices dusky, edged with viridian green, the middle rectrices green with a median streak of black; maxilla black, edged (except toward tip) with yellowish; mandible yellowish (in dried skins<sup>1</sup>); legs and feet horn brown or dusky (in dried skins); length (skins), 122.9–143.8 (130.6); wing, 68.6–76.2 (69.9); tail, 44.2–53.3 (48.5); exposed culmen, 15.5–17.5 (16.5); tarsus, 17–19.1 (18); middle toe, 10.9–13.7 (12.2).<sup>2</sup>

*Adult female*.—Above plain glossy yellowish grass green, beneath lighter, more apple green; bill and feet as in adult male, but mandible usually more or less tinged with dusky; length (skins), 117.6–141.7 (129.5); wing, 65.3–71.1 (69.6); tail, 42.7–52.6 (47.2); exposed culmen, 15.5–17.8 (16.5); tarsus, 17.5–18.8 (18.3); middle toe, 11.9–12.7 (12.4).<sup>3</sup>

*Young male*.—Similar to the adult female, but duller in color.

*Immature male*.—Variously intermediate in coloration between the adult male and female, according to age.

Eastern Guatemala (Choctum, Kampamak, Yaxcannal, etc., 2,000 to 3,000 feet), to Isthmus of Panama (to western Ecuador?); Cuba???

<sup>1</sup> According to Richmond (Proc. U. S. Nat. Mus., xvi, 1893, 487) the mandible in life is naples yellow, the iris burnt sienna.

<sup>2</sup> Twelve specimens.

<sup>3</sup> Eight specimens.

- Chlorophanes guatemalensis* SCLATER, Proc. Zool. Soc. Lond., 1861, 129 (Guatemala; coll. P. L. Sclater); Cat. Am. Birds, 1862, 52 (Choctum, Guatemala).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 349 (Panama R. R.); 1870, 836 (San Pedro, Honduras).—SALVIN, Ibis, 1866, 203 (Guatemala); 1872, 315 (Chontales, Nicaragua); Proc. Zool. Soc. Lond., 1867, 137 (Boquete de Chitra and Cordillera del Tole, Veragua); 1870, 185 (Calovevora, Veragua).  
*Chlorophanes guatemalensis* SALVADORI, Atti. R. Acad. Sci. Torino, iv, 1868, 172 (Costa Rica).  
*Chlorophanes spiza* var. *guatemalensis* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., ix, 1868, 97 (Juiz and Turrialba, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 297 (Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Naranjo, Costa Rica).  
*Chlorophanes spiza guatemalensis* RIDGWAY, Proc. U. S. Nat. Mus., x, Aug. 6, 1888, 585 (Segovia R., Honduras).—(?) ALLEN, Bull. Am. Mus. N. H., ii, 1889, 69 (Ecuador).—CHERRIE, Expl. Zool. Costa Rica, i, Aves, 1893, 17 (Boruca, s. w. Costa Rica).—BANGS, Auk, xviii, 1901, 369 (Divala, Chiriqui).  
 [Dacnis] *guatemalensis* GRAY, Hand-list, i, 1869, 118, no. 1471.  
*Chlorophanes spiza* (not *Certhia spiza* Linnaeus) LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 175 (David, Chiriqui).—CORY, Birds West Indies, 1889, 69 (Cuba?); Cat. W. I. Birds, 1892, 123 (do.).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 487 (Rio Escondido, Nicaragua; habits).—UNDERWOOD, Ibis, 1896, 435 (Volcan de Miravalles, Costa Rica).  
*Chlorophanes atricapilla* (not *Certhia atricapilla* Vieillot) SCLATER and SALVIN, Ibis, 1859, 14 (Guatemala).—SALVIN and SCLATER, Ibis, 1860, 32 (Guatemala; crit.).—SALVIN, Ibis, 1866, 203 (Guatemala).—LAWRENCE, Ann. Lyc. N. Y., vii, 1862, 319 (Panama R. R.).—BOUCARD, Liste Ois. Guat., 1878, 31.—CORY, Auk, iii, 1886, 55 (Cuba?).  
 [Chlorophanes] *atricapilla* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16, part.  
 [Dacnis] *ceruleocens* (not *Chlorophanes ceruleocens* Cassin) GRAY, Hand-list, i, 1869, 118, no. 1472 (Guatemala; Nicaragua).  
 (?) *Chlorophanes spiza exsul* BERLEPSCH, Proc. Zool. Soc. Lond., 1883, 543 (Chimbo, w. Ecuador;<sup>1</sup> coll. Count von Berlepsch).



broad superior membrane. Rictal bristles obsolete or very minute. Wing long (more than four times as long as tarsus), the tip well produced (longer than tarsus); ninth, eighth, and seventh primaries longest, the ninth equal to or longer than seventh. Tail less than two-thirds as long as wing (decidedly less than distance from bend of wing to tip of secondaries), emarginate, the rectrices rather narrow. Tarsus rather short (much shorter than exposed culmen, much less than one-fourth as long as wing), the acrotarsial scutella rather distinct; middle toe with claw longer than tarsus; claws of lateral toes reaching about to base of middle claw, the outer slightly longer than the inner; basal phalanx of middle toe united for its entire length to outer toe, for about half its length to inner toe; hallux about as long as lateral toes, but much stouter, its claw much shorter than the digit, very strongly curved.

*Coloration*.—Adult males rich blue or violet-blue, with lores, wings, and tail (also throat or else back) black; females green above, beneath paler (sometimes yellowish or buffy), more or less streaked.

*Range*.—Southern Mexico to Bolivia and southern Brazil; Cuba.

#### KEY TO THE SPECIES OF CYANERPES.

- a. General color blue and black. (Adult males.)
  - b. Chin and throat purplish blue, like rest of under parts; back black; inner webs of remiges partly yellow. (Southern Mexico to southern Brazil; Cuba.)  
*Cyanerpes cyaneus*, adult male (p. 386)
  - bb. Chin and throat black; back purplish blue; inner webs of remiges without yellow.
    - c. Black of throat not extending beyond, truncated posteriorly; general color violet-blue (smalt or hyacinth). (Colombia to Bolivia and eastern Peru.)  
*Cyanerpes caeruleus*, adult male (extralimital<sup>1</sup>)
    - cc. Black of throat extending over chest, rounded or convex posteriorly; general color ultramarine or french blue.
      - d. Larger (wing 52.1–60.4, exposed culmen 15.5–19.6); blue color duller. (Isthmus of Panama to Guatemala.)  
*Cyanerpes lucidus*, adult male (p. 389)

<sup>1</sup> CYANERPES CÆRULEUS (Linnæus).

[*Certhia*] *caerulea* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 118; ed. 12, i, 1766, 185.

[*Cæreba*] *caerulea* VIEILLOT, Enc. Méth., ii, 1823, 610.

*Cæreba caerulea* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 33.

[*A[rbelorchina]*] *coerulea* CABANIS, in Schomburgk's Reise Brit. Guiana, iii, 1848, 675.

*Cyanerpes caeruleus* OBERHOLSER, Auk, xvi, Jan., 1899, 34 (synonymy; geog. range).

[*Certhia*] *ochrochlora* GMELIN, Syst. Nat., i, pt. i, 1788, 472 (based on *Yellow-cheeked Creeper* Latham, Gen. Synopsis, i, pt. 2, p. 734; Surinam).

[*Certhia*] *surinamensis* LATHAM, Index Orn., i, 1790, 295 (based on *Certhia ochrochlora* GMELIN, *Yellow-cheeked Creeper* Latham, Synopsis, ii, p. 734).

[*A[rbelorchina]*] *brevirostris* CABANIS, Mus. Hein., i, 1850, 96 (Puerto Cabello, Venezuela; coll. Heine Mus.).

*Cæreba brevirostris* SCLATER, Cat. Am. Birds, 1862, 53 (Bogota, Colombia).

*Coereba coerulea microrhyncha* BERLEPSCH, Journ. für Orn., xxxii, Oct., 1884, 287 (Bucaramanga and Bogota, Colombia; coll. Count von Berlepsch).

dd. Smaller (wing 48.3; exposed culmen 12.7); blue color brighter. (Colombia to upper Amazon Valley.)

*Cyanerpes nitidus*, adult male (extralimital<sup>1</sup>)

aa. General color dull green above, paler beneath, the chest sometimes streaked. (Adult females and young.)

b. Under wing-coverts and part of inner webs of secondaries yellow; chest without distinct streaks; throat not buffy.

*Cyanerpes cyaneus*, adult female and young (p. 386)

bb. Under wing-coverts white, or yellowish white; inner webs of secondaries without any yellow; chest distinctly streaked; throat buffy.

c. Lores buffy, like throat; chest streaked with dark green; sides and flanks green streaked with white.

*Cyanerpes caeruleus*, adult female and young (extralimital)

cc. Lores dusky; chest streaked with blue; sides and flanks plain green.

*Cyanerpes lucidus*, adult female and young (p. 390)

# CYANERPES CYANEUS (Linnaeus).

## BLUE HONEY CREEPER.

*Adult male*.—Lores, orbits (terminating in an obtuse angle behind eye), hindneck, back, wings, and tail deep black; crown light turquoise or Nile blue; inner webs of secondaries, except terminal portion, part of inner webs of primaries, and part of under wing-coverts canary yellow; rest of plumage uniform smalt blue; bill black; legs and feet vermilion red in life, fading to pale brownish or yellowish in dried skins; length (skins), 105.4–120.9 (116.8); wing, 58.2–68.6 (63.2); tail, 34.3–39.1 (36.6); exposed culmen, 15–18.5 (16.5); tarsus, 13–15.2 (14.2); middle toe, 9.7–11.9 (10.7).<sup>1</sup>

*Adult female*. Above plain dull green or olive-green, the wings and tail dusky with green or olive-green edgings; greater portion of inner

pale olive-yellowish or whitish; chest indistinctly streaked with pale olive-greenish and pale olive-yellowish or whitish; bill blackish; legs and feet dull red in life, brownish in dried skins; length (skins), 99.8–119.4 (113); wing, 59.4–64.5 (61.7); tail, 32.5–37.8 (35.1); exposed culmen, 15–18.5 (17); tarsus, 13–15.5 (14.7); middle toe, 9.7–11.7 (10.7).<sup>1</sup>

<sup>1</sup> Nineteen specimens, from Middle America.

After careful comparison of all the material available I am unable to discover any appreciable or constant difference between South American and Middle American examples of this species, except that specimens from the coast of northern South America (Venezuela to Santa Marta, Colombia) have very long bills, and may constitute a fairly well-marked subspecies *C. c. brevipes* (Cabanis). It is possible that a satisfactory division may be made based upon females, as claimed by Mr. Oberholser (Auk, xvi, 1899, 33), but after careful examination of specimens which, however, are very inadequate, I am compelled for the present to forego any attempt at such division. If any form is to be separated it seems to me that the Cuban birds should be thus distinguished, for the few females from that island which I have seen appear to be considerably paler and more uniform in color beneath than any others.

Average measurements according to locality are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
<b>MALES.</b>					
Two adult males from Cuba.....	64.5	38.1	17.8	15.2	10.9
Six adult males from southern Mexico.....	64.8	37.1	15.7	14.5	10.7
Two adult males from Guatemala.....	61.7	35.1	16.3	14	10.9
Four adult males from Honduras (Truxillo).....	62.5	35.6	17	14	10.2
Two adult males from Nicaragua.....	61.5	35.3	17.8	14.7	10.7
Six adult males from Isthmus of Panama.....	63.2	37.6	16.5	14.5	10.9
Four adult males from Santa Marta, Colombia.....	66.3	39.9	18.5	14.5	10.4
One adult male from Caracas, Venezuela.....	65.8	38.9	22.1	14.7	10.2
Four adult males from Margarita Island, Venezuela.....	65.8	38.9	21.1	14.7	10.4
Four adult males from Trinidad.....	65.3	38.1	16.8	14.5	10.2
Three adult males from Tobago.....	69.1	41.7	18.3	15	10.7
Two adult males from British Guiana.....	64	37.3	16.3	.....	.....
Two adult males from lower Amazon (Pará).....	61.2	38.1	15.2	14.2	9.4
Three adult males from eastern Brazil (Bahia).....	63.8	37.1	15.7	14.2	10.2
Three adult males from southwestern Brazil (Chapada)....	66.3	39.6	14.5	15.5	10.4
<b>FEMALES.</b>					
One adult female from Cuba.....	59.9	32.5	17.3	15.2	11.4
Five adult females from southern Mexico.....	62.5	35.1	16.5	14.5	10.9
Five adult females from Guatemala.....	63	35.8	17	14.7	10.9
Three adult females from Honduras.....	61.7	33.8	16.3	15	9.9
Two adult females from Nicaragua.....	60.5	35.1	18	14	10.7
Three adult females from Isthmus of Panama.....	60.5	35.6	17.8	14.7	11.2
One adult female from Venezuela.....	66.5	39.6	18.3	15.2	11.4
Two adult females from Margarita Island.....	63.5	36.8	19.3	14.7	10.2
Three adult females from Trinidad.....	63	37.6	18.8	14.5	10.2
Two adult females from Tobago.....	65	39.1	19.8	15.2	10.9
Three adult females from Bahia.....	62	36.8	18.5	14.2	10.2
One adult female from Chapada.....	66.5	40.6	15.5	14.7	9.9

*Young male*.—Similar to the adult female.

*Immature male*.—Variously intermediate in coloration between the adult male and female, according to age. (The black wings and tail are assumed before the blue appears.)

Continental tropical America in general, from southern Mexico (States of Vera Cruz, Oaxaca, etc.<sup>1</sup>) to southeastern Brazil and Bolivia; but in South America only east of the Andes; Cuba; Jamaica (accidental?).

(?) [*Certhia*] *cayana* LINNÆUS, Syst. Nat., ed. 12, 1, 1766, 186 (based on Brisson, Orn., iii, p. 636, pl. 23, fig. 2).—GMELIN, Syst. Nat., i, pt. 1, 1788, 475.—LATHAM, Index Orn., i, 1790, 293.

[*Certhia*] *cyanea* LINNÆUS, Syst. Nat., ed. 12, 1, 1766, 188 (based on *Certhia nigrocaruleoque varia* Edwards, Nat. Hist., ii, p. 114, pl. 264, fig. 1; *Certhia brasiliensis carulea* Brisson, Orn., iii, 628, pl. 31, fig. 5, etc.).—GMELIN, Syst. Nat., i, pt. 1, 1788, 483.—LATHAM, Index Orn., i, 1790, 291.

*Cereba cyanea* VIELLOT, Nouv. Diet. d'Hist. Nat., xiv, 1817, 44; Enc. Méth., 1823, 610; Gal. Ois., i, 1834, 288, pl. 176.—MAXIMILIAN, Beitr. Naturg. Bras., iii, 1831, 761.—D'ORBIGNY and LAFRESNAYE, Mag. de Zool. 1830 (Synop. Av, p. 24).—BURMEISTER, Syst. Ueb. Th. Bras., iii, 1856, 150.—SCLATER, Proc. Zool. Soc. Lond., 1856, 140, 286 (David, Chiriqui); 1857, 263 (Ega, upper Amazons); Cat. Am. Birds, 1862, 52 (Cayenne; Brazil; Amazons); Cat. Birds Brit. Mus., xi, 1866, 32 (s. Mexico to s. e. Brazil and Bolivia; Cuba).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 266 (monogr.).—TAYLOR, Ibis, 1864, 81 (Trinidad); 1870, 836 (San Pedro, Honduras); 1873, 260 (Sarayacu, etc., e. Peru); 1879, 597. —SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1866, 179 (Sarayacu, e. Ecuador); 1867, 570 (Parí, lower Amazons), 749 (Rio Huallaga, e. Peru); 1868, 166, 627 (Venezuela).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 97 (Costa Rica).—FINSCH, Proc. Zool. Soc. Lond., 1870, 561 (Trinidad).—PRZELIS, Orn. Bras., 1871, 25.—SALVIN, Ibis, 1872, 315 (Chontales, Nicaragua); 1885, 207 (British Guiana); Cat. Strickland Coll., 1882, 177 (Brazil, Trinidad, Guatemala). LAYARD, Ibis, 1873, 378.—BOUCARD, Liste

Am. Mus. N. H., iii, 1891, 347 (Chapada, prov. Matto Grosso, s. w. Brazil; crit.; descr. eggs).—CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 310 (San Pablo, s. Cuba); vi, 1894, 26 (Trinidad).—CORY, Cat. W. I. Birds, 1892, 117, 155 (Cuba).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 487 (Rio Escondido and San Carlos, Nicaragua).—CHERRIE, Expl. Zool. Costa Rica, i, Aves, 1893, 17 (Lagarto, Boruca, Térraba, and Buenos Aires, s. w. Costa Rica).

*Cyanerpes cyaneus* OBERHOLSER, Auk, xvi, Jan., 1891, 32 (synonymy; geog. range, etc.).—BANGS, Auk, xviii, 1891, 31 (San Miguel I., Bay of Panama).

(?)[*Certhia*] *cyanogastra* LATHAM, Index Orn., i, 1790, 295 (based on *Blue-throated Creeper* Latham, Synopsis, ii, 734).

(?)[*Certhia*] *flavipes* GMELIN, Syst. Nat., i, 1788, 472 (based on *Blue-throated Creeper* Latham, Synopsis, ii, 734).

*Correba carneipes* SCLATER, Proc. Zool. Soc. Lond., 1859, 376 (Playa Vicente, Oaxaca, s. Mexico; coll. P. L. Sclater); 1864, 173 ("valley of Mexico"); Cat. Am. Birds, 1862, 52 (Oaxaca).—SCLATER and SALVIN, Ibis, 1860, 32 (Dueñas, Guatemala); Proc. Zool. Soc. Lond., 1864, 349 (Panama R. R.).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 291, 317 (Panama R. R.); viii, 1865, 175 (David, Chiriqui).—SALVIN, Proc. Zool. Soc. Lond., 1867, 137; (Cordillera de Tolé, Santiago, and Santa Fé, Veragua; David, Chiriqui); 1870, 185 (Bugaba, Volcan de Chiriqui, Chitra, Castillo, Cordillera del Chucu, and Calovevora, Veragua).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 548 (hot district, Vera Cruz).

*Correba cyanea* var. *carneipes* BOUCARD, Cat. Av., 1876, 239, no. 7444 (Mexico).

*Cyanerpes cyaneus carneipes* OBERHOLSER, Auk, xvi, Jan., 1899, 33 (crit.; s. Mexico to Panama).

*Arbelorhina brevipes* CABANIS, Mus. Hein., i, 1850, 96 (Puerto Cabello, Venezuela; coll. Heine Mus.).

*Correba brevipes* REICHENBACH, Handb. Spec. Orn., 1851, 237.

*Cyanerpes cyaneus brevipes* OBERHOLSER, Auk, xvi, Jan., 1899, 33 (synonymy; crit.).

*Arbelorhina eximia* CABANIS, Mus. Hein., i, 1850, 96 (Puerto Cabello, Venezuela; coll. Heine Mus.).

*Correba cyanea eximia* BERLEPSCH, Journ. für Orn., 1884, 287 (Bucaramanga, Colombia).

*Arbelorhina cyanea eximia* RICHMOND, Proc. U. S. Nat. Mus., xviii, Aug. 12, 1896, 679, (Margarita I., Venezuela).—ROBINSON, Proc. U. S. Nat. Mus., xviii, 1896, 679 (habits).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 143 (Santa Marta, Colombia).

*Cyanerpes cyanea eximia* ALLEN, Bull. Am. Mus. N. H., xviii, Aug. 25, 1900, 173 (Bonda, etc., prov. Santa Marta, Colombia).

### CYANERPES LUCIDUS (Sclater and Salvin).

#### SHINING HONEY CREEPER.

*Adult male*.—Lores, chin, throat, and upper median portion of chest uniform deep black; wings, tail, and thighs black; rest of plumage plain dull ultramarine or french blue, lighter more azure blue on head; bill black; legs and feet canary yellow in life,<sup>1</sup> dull yellowish in dried skins; length (skins), 91.4–109.7 (100.6); wing, 52.1–60.5 (57.4); tail, 26.4–32.3 (29.5); exposed culmen, 15.5–19.6 (18); tarsus, 14–16.3 (14.7); middle toe, 9.7–11.4 (10.7).<sup>2</sup>

<sup>1</sup> Richmond, Proc. U. S. Nat. Mus., xvi, 1893, 488.

<sup>2</sup> Ten specimens.

*Adult female*.—Pileum and hindneck dull grayish blue or greenish, the forehead (sometimes crown also) usually narrowly streaked with whitish; rest of upper parts plain dull grass green or parrot green; lores brownish dusky; malar region blue or partly blue; chin and throat buff; median under parts dull whitish, the chest streaked with blue; sides and flanks plain grayish green; bill black; legs and feet sage green in life,<sup>1</sup> brownish in dried skins; length (skins), 93.5–103.1 (98.6); wing, 50.8–57.4 (54.6); tail, 25.4–30.5 (27.9); exposed culmen, 18.5–19.6 (19.1), tarsus, 14.7–15.7 (15); middle toe, 9.4–10.7 (10.4).<sup>2</sup>

*Young male*.—Similar in coloration to the adult female.

*Immature male*.—Variously intermediate in color between adult male and female, according to age.

Central America, from Guatemala (Choctum) to the Isthmus of Panama (line of Panama Railroad).

*Cereba cerulea* (not *Certhia cerulea* Linnaeus) SCLATER, Proc. Zool. Soc. Lond., 1856, 140 (Veragua).

*Cereba lucida* SCLATER and SALVIN, Ibis, 1st ser., i, Jan., 1860, 14 (Guatemala); Proc. Zool. Soc. Lond., 1864, 349 (Panama R. R.).—MOORE, Proc. Zool. Soc. Lond., 1859, 53 (Honduras).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 291, 318 (Panama R. R.).—SCLATER, Cat. Am. Birds, 1862, 53 (Choctum, Vera Paz, Guatemala); Cat. Birds Brit. Mus., xi, 1886, 35 (Choctum, Guatemala; Bugaba, Veragua; Lion Hill, Panama R. R.).—CASSIN, Proc. Acad. Nat. Sci. Phila., 1864, 267 (monogr.).—SALVIN, Proc. Zool. Soc. Lond., 1867, 137 (David, Chiriqui); 1870, 185 (Bugaba, Veragua).—BOUCAUD, Liste Ois. Guat., 1878, 32.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 249. [*Cereba*] *lucida* GRAY, Hand-list, i, 1869, 117, no. 1453.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.

*Arbelorhina lucida* HEINE and REICHENOW, Nom. Mus. Hein., Orn., 1882, 60.—ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 108 (San José, Puerto Limón, and Pozo Azul de Pittis).—CHERRIE, Auk, ix, 1892, 23 (San José, Costa Rica).

and black (sometimes with white or yellow abdomen or scarlet thighs), or else yellow and black with greenish pileum.

Bill shorter than head, narrowly conical or wedge-shaped, usually very slightly decurved terminally, with tip acute; culmen nearly straight for basal half or more, thence slightly and gradually decurved to the acute tip of the maxilla; gonys straight or sometimes faintly concave terminally. Nostrils exposed, longitudinally oval, overhung by rather broad membrane. Rictal bristles very minute or obsolete. Wing moderate, rather pointed (ninth, eighth, and seventh primaries longest, the ninth longer than sixth, sometimes equal to longest); wing-tip equal to or longer than tarsus (usually decidedly longer). Tail much shorter than wing (decidedly shorter than distance from bend of wing to tip of secondaries), even or very slightly rounded. Tarsus about as long as commissure or a little longer, distinctly scutellate; middle toe with claw about equal to tarsus or slightly shorter.

*Coloration*.—Adult males bright bluish green to violet-blue, varied with black, some species with the abdomen, etc., white or yellow, or with scarlet thighs; or else the plumage yellow and black, with greenish pileum; adult females much duller in color; greenish, olive, or brownish above, pale below, the head sometimes bluish, with grayish throat.

*Range*.—Nicaragua to Peru, Bolivia, and southern Brazil.

This genus has hitherto included some half dozen species which certainly do not belong to it. These are *D. pulcherrima* Sclater, which I have made the type of a new genus, *Iridophanes*;<sup>1</sup> and referred, provisionally at least, to the Tanagridæ,<sup>2</sup> and the last six species given by Dr. Sclater (except possibly *D. salmoni*, which I have not seen), these latter, according to my views, constituting a distinct genus (*Ateleodacnis* Cassin<sup>3</sup>) and belonging to the Mniotiltidæ. Of the species left in *Dacnis* the most aberrant is *D. flaviventris*.<sup>4</sup> This has the bill straighter than any other species (almost perfectly straight, in fact), and has the tarsus much longer than middle toe with claw; the coloration is very different from that of other species, clear lemon yellow replacing blue, but the pattern is essentially the same.

#### KEY TO THE SPECIES AND SUBSPECIES OF DACNIS.

- a. Lores and at least part of back black; under parts (except throat, in some species) bright blue or green, or else greenish black with scarlet thighs. (Adult males.)
- b. Under parts of body blue; thighs blue or bluish gray; wings with conspicuous blue edgings.

<sup>1</sup> Proc. Biol. Soc. Wash., iii, 1891, 150.

<sup>2</sup> See page 2, this volume.

<sup>3</sup> *Ateleodacnis* Cassin, Proc. Ac. Nat. Sci. Phila., 1864, 270. (Type, *Dacnis leucogenys* Lafresnaye.)

<sup>4</sup> *Dacnis flaviventris* Lafresnaye and D'Orbigny, Mag. de Zool., 1839, Synop. Av., 21.

- c. Throat black; under wing-coverts gray. (*Dacnis cayana*.)
- d. General color bright cerulean or turquoise blue, changing to bluish green; throat deeper black. (Colombia to southern Brazil and Bolivia; Chiriqui?)  
*Dacnis cayana cayana*, adult male (p. 392)
- dd. General color bright ultramarine or cobalt blue, changing to greenish blue; throat dull greenish black. (Isthmus of Panama to Nicaragua.)  
*Dacnis cayana ultramarina*, adult male (p. 394)
- ce. Throat bluish green; under wing-coverts white. (Isthmus of Panama.)  
*Dacnis viguieri*, adult male (p. 396)
- bb. Under parts of body greenish black; thighs scarlet; wings entirely black. (Costa Rica to Colombia.) .....*Dacnis venusta*, adult male (p. 396)
- aa. No black on lores nor back; under parts of body yellowish green, or light buffy grayish anteriorly passing into buffy or buffy yellowish posteriorly. (Adult females and young.)
- b. Under parts yellowish green, the throat bluish gray; pileum greenish blue; wing-coverts, remiges, and rectrices edged with bright yellowish green.
- c. More yellowish green, with head lighter and more greenish blue.  
*Dacnis cayana cayana*, adult female and young male (p. 392)
- cc. Clearer green, with head deeper and less greenish blue.  
*Dacnis cayana ultramarina*, adult female and young male (p. 395)
- bb. Under parts light buffy grayish anteriorly, passing into buffy posteriorly (the abdomen more yellowish); wing-coverts plain greenish gray or olive, the remiges and rectrices edged with same.  
*Dacnis venusta*, adult female and young male (p. 397)

**DACNIS CAYANA CAYANA (Linnaeus).**

**CAYENNE DACNIS.**

*Adult male*.—Lores, postocular streak (of variable extent), chin, throat, and back, uniform black; wings and tail black; middle wing-coverts tipped with bright greenish blue, greater coverts and tertials broadly, secondaries and primaries (in part) narrowly, edged with the





(43.7); exposed culmen, 11.7–14.7 (13.2); tarsus, 15.2–17.5 (16.5); middle toe, 9.7–12.2 (10.7).<sup>1</sup>

Eastern tropical South America, from southern Brazil, and Bolivia to Guiana, Venezuela, and Colombia; Chiriqui?<sup>2</sup>

?? [*Motacilla*] *cayana*<sup>3</sup> LINNÆUS, Syst. Nat., ed. 12, i, 1766, 336 (based on *Blue Manakin* Edwards, Nat. Hist. Birds, pl. 263, lower fig.; *Sylvia cayanensis cerulea* Brisson, Orn., iii, 534, pl. 28, fig. 1).—GMELIN, Syst. Nat., i, pt. ii, 1788, 990.

*D[acnis] cayanus* D'ORBIGNY and LAFRESNAYE, Mag. de Zool., 1839 (Synop. Av., p. 20) (Yuracares, prov. Chiquitos, Bolivia).

*D[acnis] cayana* CABANIS, Mus. Hein., i, 1850, 95 (Cayenne).

[*Dacnis*] *cayana* BONAPARTE, Consp. Av., i, 1850, 400.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.

*Dacnis cayana* STRICKLAND, Contr. Orn., 1851, 15 (crit.; synonymy).—SCLATER, Jardine's Contr. Orn., 1851, 106 (monogr.); Proc. Zool. Soc. Lond., 1854, 110 (Pallatanga, e. Ecuador), 252 (Trinidad; Guiana; Cayenne; Brazil; e. Peru; Bolivia); 1855, 137 (Bogota, Colombia); 1857, 263 (Ega, upper Amazons); 1858, 452 (Gualaquiza, e. Ecuador); Cat. Am. Birds, 1862, 50 (Bogota, Colombia; Trinidad; Cayenne); Ibis, 1863, 313 (monogr.); Cat. Birds Brit. Mus., viii, 1886, 19, part (Volcan de Chiriqui and Bugaba, Chiriqui; South American localities).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 268 (monogr.).—TAYLOR, Ibis, 1864, 81 (Trinidad).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1866, 179 (Rio Ucayali, e. Peru); 1867, 570 (Pará,

<sup>1</sup> Nine specimens.

The specimens measured average as follows, according to locality:

Locality.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
MALES.					
Four adult males from Colombia ("Bogota") .....	67.1	44.2	13.2	16	10.4
Two adult males from Trinidad .....	62.2	42.4	12.7	15.7	10.4
One adult male from British Guiana .....	62	42.9	13	.....	.....
Five adult males from eastern Brazil .....	64.5	44.2	13.2	16.5	10.7
Two adult males from southwestern Brazil (Chapada) .....	67.6	46.5	13.7	16.3	11.2
FEMALES.					
One adult female from Colombia ("Bogota") .....	67.3	47	13.5	16	10.7
Three adult females from Trinidad .....	62.2	43.9	14.2	16.5	10.9
One adult female from British Guiana .....	57.2	39.6	11.7	16.5	10.2
One adult female from lower Amazon (Santarem) .....	60.5	43.4	12.2	15.2	9.7
Two adult females from southwestern Brazil (Chapada) ...	66.8	44.7	13.7	17.5	9.7
One adult female from Bolivia .....	62.2	43.7	12.2	16	9.9

The South American birds will probably require subdivision into two or more geographic subspecies. Specimens from Colombia are, as a rule, more decidedly blue than those from other parts of South America, especially those from southern Brazil, which, besides being larger, are decidedly greenish and have the black duller, especially that on the throat. (See Allen, Bull. Am. Mus. Nat. Hist., iii, 1891, p. 347, where average measurements of 20 adult males from Chapada, Matto Grosso, are given as follows: Wing, 68.8; tail, 45.5; exposed culmen, 13.)

<sup>2</sup> Although Chiriqui examples have, at least generally, the light blue color of true *D. cayana*, I am exceedingly doubtful whether they should be referred to that form. Lack of adequate material, however, prevents me from reaching a satisfactory conclusion in the matter.

<sup>3</sup> See Berlepsch, Journ. für Orn., 1873, 235.

lower Amazon), 749 (Rio Hualaga, e. Peru), 977 (Amazonia); 1873, 259 (lower Uçayali, Neberos, Chamicuro, Pebas, and Ega, e. Peru); 1875, 237 (province of Tachira, Venezuela); 1879, 496 (Remedios, prov. Antioquia, Colombia), 597 (Rio Tanapaya, etc., Bolivia).—LEOTARD, Ois. Trinidad, 1866, 124.—SALVADORI, Atti. R. Ac. Sci. Torino, ii, 1868, 261 (crit.; synonymy).—PELZELN, Orn. Bras., 1871, 25.—LAYARD, Ibis, 1873, 378 (Pará).—TAJANOWSKI, Proc. Zool. Soc. Lond., 1874, 510 (Monterico, centr. Peru); 1882, 9 (Huambo, n. e. Peru); Orn. du Pérou, i, 1884, 428.—ALLEN, Bull. Essex Inst., viii, 1876, 78 (Santarem, lower Amazon); Bull. Am. Mus. N. H., ii, 1889, 80 (Mapiri and Falls of Madeira, Bolivia); iii, 1891, 347 (Chapala, prov. Matto Grosso, s. w. Brazil; crit.).—FORBES, Ibis, 1881, 330 (Caxanga, Recife, etc., n. e. Brazil).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 244, part (South American localities).—SALVIN, Ibis, 1885, 307 (British Guiana).—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 26 (Trinidad).—IHERING, Aves d. Est. S. Paulo, 1899, 141 (Iguape).

[*Fringilla*] *cyanomela* Gmelin, Syst. Nat., i, 1788, 924 (based on *Fringilla caerulea*, *menlo*, *gula*, etc., *nigris* Koelreuter, Nov. Comm. Petrop., xi, 434, pl. 15, fig. 6).

*D[acnis]* *cyanomela* CABANIS, Mus. Hein., i, 1850, 95 (Brazil).

*Dacnis cyanomela* REICHENBACH, Handb., ii, 1853, 227.—BURMEISTER, Syst. l'eb. Th. Bras., iii, 1856, 153.—BERLEPSCH, Journ. für Orn., 1873, 235 (Santa Catarina, s. Brazil; synonymy, crit., etc.); 1889, 294 (Tarapoto, upper Amazon; crit.).—BOUCARD and BERLEPSCH, The Humming Bird, ii, 1892, 43 (Porto Real, Brazil).

[*Motacilla*] *cyanocephala* Gmelin, Syst. Nat., i, 1788, 990 (= female; based on *Sylvia viridis* Brisson, Orn., iii, 531, pl. 28, fig. 4; *Blue-headed Warbler* Latham, Synopsis, ii, pt. 2, 503, etc.; Cayenne).

*Nectarinia cyanocephala* SWAINSON, Zool. Illustr., ser. i, vol. ii, 1822, pl. 117.

*D[acnis]* *cyanocephala* GRAY, Gen. Birds, i, 1846, 102 (not pl. 34, fig. 2).—CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 675.

*Dacnis cyanocephala* D'ORBIGNY, Voy. Amer. Mérid., Ois., 1839, 221 (Paraguay; Bolivia).

(?) *N[ectarinia]* *ceruliocephala* SWAINSON, Birds West Africa, ii, 1835, 141.

*Nectarinia bicolor* (not *Sylvia bicolor* Vieillot, 1807) BECKLERICHTEW, Nouv. Mém. Soc. Mus., 1820, 178, pl. 23.

dull grayish black washed with dull blue; adult female less yellowish green than that of *D. c. cayana*, with blue of head deeper and less greenish.

*Adult male*.—Lores, short triangular postocular streak, and back black, the last sometimes slightly glossed or overlaid with dull bluish; chin and throat dull grayish black or blackish gray, tinged or glossed with dull blue; wings and tail black, the middle wing-coverts broadly tipped with bright blue, the greater coverts and tertials broadly, the secondaries and primaries in part (sometimes also median rectrices), narrowly, edged with the same; rest of plumage bright blue, usually cobalt or ultramarine when viewed toward the light,<sup>1</sup> changing to more greenish blue when viewed from the light; concealed portion of upper tail-coverts black, the plumage of under parts grayish beneath the surface; bill brownish black terminally, more brownish basally, especially on mandible; legs and feet brownish (in dried skins); length (skins), 102.9–119.9 (110.7); wing, 60.2–66.3 (63); tail, 41.1–44.7 (42.7); exposed culmen, 12.4–13.7 (13); tarsus, 15.2–17 (16); middle toe, 10.2–10.9 (10.7).<sup>2</sup>

*Adult female*.—Yellowish grass green, brighter on rump and upper tail-coverts, rather lighter (approaching apple green) on under parts; head greenish blue, the throat light bluish gray; lesser wing-coverts darker greenish blue than head, the centers of feathers (like those of pileum) darker; bill and feet as in the adult male, but the former more distinctly and extensively brownish basally; length (skins), 105.4–117.3 (113); wing, 62–64.3 (63.5); tail, 40.9–44.5 (42.7); exposed culmen, 13–14 (13.5); tarsus, 15.5–16.5 (16); middle toe, 10.9–11.4 (11.2).<sup>3</sup>

Isthmus of Panama (Panama Railroad) to eastern Nicaragua (Greytown; Rio Escondido; Chontales, etc.).

*Dacnis cerebicolor* (not of Sclater) LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 219 (Panama R. R.).

*Dacnis ultramarina* LAWRENCE, Proc. Ac. Nat. Sci. Phila., xvi, 1864, 106 (Panama R. R.; coll. G. N. Lawrence?); Ann. Lyc. N. Y., viii, 1865, 180 (Greytown, Nicaragua); ix, 1868, 97 (Angostura, Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 348 (Panama R. R.).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 269 (monogr.).—SALVIN, Proc. Zool. Soc. Lond., 1870, 185 (Chepo, Isthmus of Panama).—BERLEPSCH, Journ. für Orn., 1873, 236 (crit.).—SALVIN and GODMAN, Biol. Cent.-Am., Aves, i, 1883, 244.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 108 (Las Trojas de Puntarenas).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 487 (Rio Escondido, Nicaragua).—CHERRIE, Expl. Zool. Costa Rica, i, Aves, 1893, 17 (Terrába, s. w. Costa Rica).

[*Dacnis*] *ultramarina* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.

[*Dacnis cayana*.] a. Subsp. *ultramarina* SCLATER, Cat. Birds Brit. Mus., xi, 1886, 20, in list of specimens.

<sup>1</sup> The color of *D. c. cayana* in the same position is cerulean or turquoise blue, changing to bluish green.

<sup>2</sup> Seven specimens.

<sup>3</sup> Five specimens.

- (?) *Dacnis cayana* (not *Motacilla cayana* Linnæus) SALVIN, Ibis, 1870, 185 (Mina de Chorrha, Veragua); 1872, 313, 314 (Chontales, Nicaragua).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 19, part (Chontales, Nicaragua; Chepo, Veragua; Lion Hill and Panama, Panama R. R.).
- (?) *Dacnis cayana glaucogularis* BERLEPSCH and STOLZMANN, Proc. Zool. Soc. Lond., Aug. 1, 1896, 336 (La Gloria and La Merced, centr. Peru; coll. Branicki Mus.).<sup>1</sup>

## DACNIS VIGUIERI Oustalet.

## VIGUIER'S DACNIS.

*Adult male*.—Bluish green, the lores, back, and tail black; primaries black, with inner webs edged with white; distal secondaries blackish, edged with green, proximal secondaries (tertials) broadly edged with yellowish green, their inner webs blackish; bill and feet black; length, 119.9; tail, 50; tarsus, 15; exposed culmen, 9.9.

"Head, throat, breast, abdomen, and under tail-coverts bright green glossed with blue, corresponding with the color called in France cendre-vert; lores, back, and tail deep black; remiges black, their inner webs edged with white; innermost secondaries black margined with clear green, the remaining secondaries for the greater part green with an inner margin of black; lesser (?) coverts glossy yellowish or golden green, the other coverts brilliant green glossed with blue, but the concealed portions black; bill and feet uniform black. Iris golden yellow (according to M. Viguiet)."<sup>2</sup>

Isthmus of Panama (coast of Gulf of Darien).

A very distinct species, which I have not seen.

*Dacnis viguieri* OUSTALET, in Salvin and Godman's Biol. Centr.-Am., Aves, i, Not., 1883, 246 (Isthmus of Panama; coll. Paris Mus.).

*Dacnis viguieri* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, pl. 15a, fig. 3.



41.7–43.2 (42.4); exposed culmen, 12.2–13 (12.4); tarsus, 15.2–16.5 (15.7); middle toe, 10.4–11.2 (10.9).<sup>1</sup>

*Adult female*.—Pileum and hindneck dull or dusky greenish olive, the feathers narrowly and indistinctly tipped or margined with brighter greenish; sides of head and neck glaucous-green; back olive, tinged or washed with dull greenish; scapulars, rump, and upper tail-coverts glaucous-green, the last brighter, inclining to Nile blue; wings and tail olive, with indistinct paler edgings, except the middle and greater wing-coverts which, respectively, are tipped and edged distinctly with light olive; chin, throat, and chest light buffy grayish, changing posteriorly to buffy yellowish on abdomen and buff on anal region and under tail-coverts, the thighs tinged with red; bill and feet as in adult male; length (skins), 111.3–122.9 (118.4); wing, 61.7–69.1 (66); tail, 40.6–42.9 (41.4); exposed culmen, 11.9–13.2 (12.7); tarsus, 14.7–15.7 (15.5); middle toe, 10.7–11.7 (11.2).<sup>2</sup>

*Immature male*.—Forehead, lores, postocular space, anterior part of malar region, chin, and throat uniform black, as in the adult male; rest of head bright cerulean or turquoise blue, becoming dusky olive on occiput; otherwise like the adult female.

*Young male*.—Similar to the adult female, but duller and grayer above, the sides of head and neck gray instead of blue; no blue on scapulars; middle and greater wing-coverts indistinctly tipped with pale grayish.

Highlands of Costa Rica (Dota mountains, Tucurrique, Turrialba, Naranjo de Cartago, Pozo Azul de Pirris, Candelaria, etc.) to Colombia (Remedios, province of Antioquia).<sup>3</sup>

*Dacnis* sp. LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 319 (Panama R. R.).

*Dacnis venusta* (not *Sylvia venusta* Descourtilz, 1856<sup>4</sup>) LAWRENCE, Ann. Lyc. Nat. Hist., N. Y., vii, 1862, 464 (Panama R. R.); ix, 1868, 97 (Dota Mts., Costa Rica).—SCLATER, Ibis, 1863, 315, pl. 7 (monogr.); Cat. Birds Brit. Mus., xi, 1886, 24 (Tucurrique, Costa Rica; Volcan de Chiriqui, Chiriqui, and Bugabá, Veragua; Panama; Remedios, Colombia).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 348 (Panama R. R.); 1879, 497 (Remedios, prov. Antioquia, Colombia).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 269 (monogr.).—SALVADORI, Atti Ac. Sci. Torino, iv, 1868, 172 (Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 185 (Bugaba, Veragua).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 54 (Candelaria, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 245.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 108 (Naranjo de Cartago; Pozo Azul de Pirris; Turrialba).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 529 (descr. young); Expl. Zool. Costa Rica, i, Aves, 1893, 17 (Boruca, s. w. Costa Rica).

[*Dacnis*] *venusta* GRAY, Hand-list, i, 1869, 117, no. 1461.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 150.

<sup>1</sup> Six specimens.

<sup>2</sup> Five specimens.

<sup>3</sup> I have not seen Colombian specimens. These should be carefully compared with those from Costa Rica.

<sup>4</sup> *Sylvia venusta* Descourtilz, Orn. du Brésil, 1854–56, 37, pl. 42, fig. 3; = *Dacnis* [*Ateleodacnis*]  *analis* D'Orbigny and Lafresnaye.

Genus *COEREBA* Vieillot.

*Coereba* VIEILLOT, Ois. Am. Sept., i, 1807, 70. (Type, *Certhia flaveola* Linnaeus.)

*Certhiola* SUNDEVALL, Öf. Vet.-Ak. Handl. Stockholm, 1835, 99. (Type, *Certhia flaveola* Linnaeus.)

*Arbelorhina*<sup>1</sup> CABANIS, Wiegmann's Archiv. für Naturg., 1847, 325. (Substitute for *Coereba* Vieillot).<sup>2</sup>

Rather small *Coerebidae* with very acute decurved bill, long tarsus (nearly one-third as long as wing) and rounded tail, with very broad rectrices; plumage varied with dusky or grayish and yellow, white, or grayish, or else entirely black.

Bill about as long as head or a little shorter, strongly decurved terminally, with tip very acute; culmen distinctly ridged, gradually curved downward from the base; commissure distinctly arched, most strongly so toward base, the rictal portion fleshy or tumid; gonys slightly concave, its base forming a slight but decided angle; depth of bill at base equal to about one-third exposed culmen or slightly less, the basal width decidedly less than the depth. Nostril exposed, longitudinal, occupying about the lower half of nasal fossa. Rictal bristles obsolete. Wing rather long, rather pointed (eighth, seventh and sixth primaries longest, ninth intermediate between fifth and fourth); wing-tip slightly shorter than commissure, much shorter than tarsus. Tail much shorter than wing (decidedly shorter than distance from bend of wing to tip of secondaries), rounded, the rectrices very broad. Tarsus long (nearly one-third as long as wing), its scutella rather distinct; middle toe, with claw, much shorter than tarsus; basal phalanx of middle toe almost entirely free from inner toe, but united for more than half its length to outer toe.

*Coloration (sexes alike).*—Above grayish, olive, or blackish, usually

- f.* Flanks pale gray, very slightly if at all tinged with yellow; lower abdomen and anal region white or yellowish white. (Bahama Islands.)  
*Cœreba bahamensis*, adults (p. 401)
- ff.* Flanks yellowish gray or olive, strongly tinged with yellow; lower abdomen and anal region yellow.
- g.* Black on lores and beneath eyes broader (as in *C. bahamensis*); white superciliary stripe much narrower; white spots at tip of lateral rectrices much smaller. (Island of Cozumel, Yucatan.)  
*Cœreba caboti*, adults (p. 404)
- gg.* Black on lores and beneath eyes narrower; white superciliary stripe broader (as in *C. bahamensis*); white spots at tip of lateral rectrices much larger.
- h.* Smaller, with larger bill (male averaging wing 61.2, tail 41.9, exposed culmen 15); yellow of rump tinged with olive. (Islands of Grand Cayman and Cayman Brac, Greater Antilles.)  
*Cœreba sharpei*, adults (p. 404)
- hh.* Larger, with smaller bill (male averaging wing 65.8, tail 46.2, exposed culmen 14); yellow of rump purer. (Island of Old Providence, Caribbean Sea.) . . . . *Cœreba tricolor*, adults (p. 405)
- ee.* Throat distinctly gray (not paler than gray no. 7).
- f.* Throat paler gray (no. 6 or no. 7).
- g.* Back, etc., sooty blackish; white wing-spot large and conspicuous; breast, etc., brighter yellow.
- h.* Throat deeper gray (no. 6); rump pure lemon or canary yellow; breast, etc., deeper yellow. (Caribbean coast of Colombia and Venezuela; islands of Trinidad, Tobago, and Grenada.)  
*Cœreba luteola*, adults (p. 406)
- hh.* Throat paler gray (no. 7); rump olive-yellow; breast, etc., lighter yellow. (Island of San Miguel, Bay of Panama.)  
*Cœreba cerinoclunis*, adults (p. 408)
- gg.* Back, etc., olive, grayish olive, or brownish gray; white wing-spot (if present) small, rarely conspicuous; breast, etc., paler and duller yellow.
- h.* White wing-spot usually distinct (sometimes obsolete); smaller (wing not more than 59.9). (Southern Mexico to Colombia; Ecuador?; Peru?) . . . . . *Cœreba mexicana*, adults (p. 409)
- hh.* White wing-spot obsolete (entirely concealed by primary coverts); larger (wing 62.2). (Coast district of Guiana and Brazil.)  
*Cœreba chloropyga*, adults (extralimital<sup>1</sup>).
- ff.* Throat darker gray (slate-gray, or darker).
- g.* Throat slate-gray.
- h.* Smaller, especially the bill (exposed culmen 11.7–12.2); back and wings browner or more sooty. (Island of Haiti, Greater Antilles.) . . . . . *Cœreba bananivora*, adults (p. 411)

<sup>1</sup> *Cœreba chloropyga* (Cabanis).

*C[erthiola] chloropyga* CABANIS, Mus. Hein., i, 1850, 97 (Bahia, e. Brazil; coll. Heine Mus.).

*Certhiola chloropyga* SCLATER, Cat. Am. Birds, 1862, 53; Cat. Birds Brit. Mus., xi, 1886, 44.

*Cœreba chloropyga* ALLEN, Bull. Am. Mus. N. H., iii, 1891, 348 (Abrilonga, Cuyaba, and Chapada, s. w. Brazil; crit.)

(?) *C[erthiola] guianensis* CABANIS, Mus. Hein., i, 1850, 97 (Guiana; coll. Heine Mus.).

*Certhiola guianensis* SCLATER, Cat. Am. Birds, 1862, 53 (Cayenne).

(?) *Certhiola majuscula* CABANIS, Journ. für Orn., 1865, 413.

- hh. Larger, especially the bill (exposed culmen 13.2-15.2); back and wings darker, more blackish. (Islands of Porto Rico; Vieques, St. Thomas, St. Johns, Culebra (?), Anegada (?) and Tortola (?), Greater Antilles.) ..... *Coreba portoricensis*, adults (p. 412)
- gg. Throat blackish slate.
- h. White wing-spot not truncated posteriorly, but following edges of primaries more or less beyond it; rump-patch clear yellow, larger and sharply defined; breast darker and duller yellow (wax yellow). (Island of Jamaica, Greater Antilles.)  
*Coreba flaveola*, adults (p. 414)
- hh. White wing-spot (if present) truncated posteriorly; rump-patch decidedly olivaceous or olive-yellowish, smaller and less sharply defined; breast lighter and clearer yellow.
- i. White wing-spot larger; breast tinged with ochraceous. (Island of St. Croix, Greater Antilles.) ..... *Coreba newtoni*, adults (p. 416)
- ii. White wing-spot smaller, sometimes obsolete or altogether wanting; breast clear yellow like abdomen.
- j. White superciliary stripe broader; white wing-spot larger; smaller (wing of female 56.1-56.6, tail 34.3-34.8). (Islands of St. Vincent and Grenada, Lesser Antilles.)  
*Coreba saccharina*, adults (p. 415)
- jj. White superciliary stripe narrower; white wing-spot (if present) much smaller; larger (wing of female 56.9-58.4, tail 39.4-40.1).
- k. No white at base of primaries (except concealed by primary coverts); smaller (wing of male averaging 58.2, tail 40.4, exposed culmen 14) (Islands of Dominica, Guadeloupe, St. Christopher, Nevis, Barbuda and Antigua, Lesser Antilles.) ..... *Coreba dominicana*, adults (p. 417)
- kk. A white spot at base of primaries; larger (wing of male averaging 58.9, tail 41.1, exposed culmen 14.2). (Islands of St. Bartholomew, Saba, and St. Eustatius, Lesser Antilles) ..... *Coreba bartolomica*, adults (p. 419)



- bb.* Without a conspicuous or sharply defined superciliary stripe of white or yellow. (Young.)
- c.* Throat pale dull grayish, or if tinged with yellow the back paler grayish brown and wing more than 57.
- d.* Back, etc., grayish brown or brownish gray; white wing-spot large, conspicuous; wing 57.1–61 or more.
- e.* Paler, with less yellow below (only on the breast).  
*Cœreba bahamensis*, young (p. 401)
- ee.* Darker, with more yellow (mostly yellow) below.  
*Cœreba tricolor*, young (p. 405)
- dd.* Back, etc., light olive; white wing-spot obsolete; wing 53.3.  
*Cœreba chloropyga*, young (extralimital).
- cc.* Throat yellow or yellow and dusky; wing not more than 55.9.
- d.* A distinct white spot at base of primaries.
- e.* Under parts mostly yellow.
- f.* Sides of throat mostly dusky; white wing-spot larger, the primaries edged with white for some distance beyond it.  
*Cœreba flaveola*, young (Addenda)
- ff.* Sides of throat with little if any dusky; white wing-spot smaller, nearly truncated.....*Cœreba portoricensis*, young (p. 412)
- ee.* Under parts light olive, tinged with yellow on breast.  
*Cœreba bananivora*, young (p. 411)
- dd.* No distinct white spot at base of primaries.
- e.* Side of throat dusky .....*Cœreba barbadensis*, young (p. 420)
- ee.* Whole throat yellowish .....*Cœreba mexicana*, young (p. 410)
- aa.* Plumage unicolored (plain blackish).
- b.* Larger (wing of male 64, tail 42.7, exposed culmen 16, tarsus 19.6, middle toe 12.7). (Island of St. Vincent, Lesser Antilles.)  
*Cœreba atrata*, adults (p. 422)
- bb.* Smaller (male averaging 59.7, tail 36.3, exposed culmen 14.2, tarsus 18.8, middle toe 11.9). (Island of Grenada, Lesser Antilles.)  
*Cœreba wellsi*, adults (p. 423)

### COEREBA BAHAMENSIS (Reichenbach).

#### BAHAMA BANANAQUIT.

*Adults (sexes alike).*—Above plain sooty blackish slate, the back, scapulars, wings, and tail usually somewhat lighter than the pileum, sometimes inclining to brownish gray; a large white spot or patch at base of six to seven outermost primaries; remiges and rectrices more or less distinctly edged with pale grayish, the tertials, in fresh plumage, rather broadly margined at tips with the same or grayish white; tail narrowly tipped with whitish (except in worn plumage), the three outermost rectrices with a large terminal spot of white, about 11.4–14 in extent on lateral rectrix; rump lemon or canary yellow; a broad white superciliary stripe, extending from nostril to occiput; loreal and auricular regions and sides of neck sooty blackish slate, like pileum, the loreal and auricular areas narrowly connected beneath eye; malar region (except anterior point), chin, throat, and upper chest white, or grayish white; lower chest, breast, and median portion of upper belly lemon yellow; rest of under parts white, the flanks tinged with yellowish gray, the lower abdomen sometimes faintly tinged with yellow;

bill black, the tumid rictal portion pale brownish (flesh color in life?); legs and feet dusky horn color (in dried skins).

*Young*.—Above brownish gray or deep drab-gray, the primaries and rectrices marked with white and (together with secondaries) edged with paler gray as in adults; lower rump olive-yellow, much less distinct and more restricted than the pure yellow patch of adults; sides of head brownish gray, without any white superciliary stripe or else with this merely indicated; malar region paler grayish or dull grayish white, faintly tinged with yellow; chin, throat, and upper chest dull yellowish white; rest of under parts similar, the lower chest, breast, and upper abdomen more distinctly yellowish, the sides and flanks strongly tinged with brownish gray; bill and feet as in adults, but the former rather more brownish.

*Adult male*.—Length (skins), 109.7–127.8 (117.6); wing, 61.2–68.3 (65); tail, 39.1–48.8 (45); exposed culmen, 14.5–16.8 (15.2); tarsus, 18.5–20.8 (20.1); middle toe, 11.4–13.2 (12.4).<sup>1</sup>

*Adult female*.—Length (skins), 93–120.4 (108.2); wing, 56.6–62 (59.7); tail, 37.6–43.2 (40.1); exposed culmen, 13–15 (13.7); tarsus, 17.5–20.3 (18.8); middle toe, 11.2–13 (11.9).<sup>2</sup>

<sup>1</sup> Twenty specimens.

<sup>2</sup> Twelve specimens.

Average measurements of specimens from different islands are as follows:

Locality.	Wing	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
MALES.					
Two adult males from New Providence. ....	65	45.7	15.2	20.3	12.4
Two adult males from Concepcion Island. . . . .	64.3	46.2	15.2	19.8	12.2
Two adult males from ... ..	65.8	47.1	15.3	19.3	12.2

Bahama Islands (Great Bahama, Abaco, Bimini, Berry Islands, Eleuthera, New Providence, Andros, San Salvador, Exuma Keys, Great Exuma, Concepcion, Watlings, Rum Cay, Long Island, Green Cay, Maraguna, Grand Caicos, East Caicos, Little Inagua, Great Inagua, and Highburna Key); Florida Keys (Indian Key—accidental?).

[*Certhia flaveola*]  $\beta$ . LINNÆUS, Syst. Nat., ed. 12, i, 1766, 187, part (citation of *Certhia bahamensis* Catesby, Nat. Hist. Carolina, i, pl. 59; Brisson, Orn., iii, 620).

[*Certhia flaveola*] var.  $\gamma$ . GIMELIN, Syst. Nat., i, 1788, 479, excl. syn. part.

[*Certhia flaveola*] var. B. LATHAM, Index Orn., i, 1790, 297.—BECHSTEIN, Lath. Ueb., iv, pt. i, 1811, 188.

*Certhiola flaveola* (not *Certhia flaveola* Linnæus) GRAY, Gen. Birds, i, 1846, 102, part.—BONAPARTE, Consp. Av., i, 1850, 402, part.

*Certhiola flaveola* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 924 (Indian Key, Florida); ed. 1860 ("Birds N. Am."), atlas, pl. 83, fig. 3; Cat. N. Am. Birds, 1859, no. 301.—BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 116 (New Providence, Bahamas); 1861, 117 (Inagua, Bahamas).—ALBRECHT, Journ. für Orn., 1861, 54.—COUES, Check List, 1873, no. 106.

*Certhiola bahamensis* REICHENBACH, Handb., i, 1853, 253 (based on *Certhia bahamensis* Catesby, Nat. Hist. Carolina, i, pl. 59).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 271 (monogr.).—CABANIS, Journ. für Orn., 1865, 412.—BRYANT, Proc. Bost. Soc. N. H., xi, 1866, 66 (Inagua).—BAIRD, Journ. für Orn., 1866, 264.—SUNDEVALL, Öfv. K. Vet.-Ak. Förh. Stockh., 1869, 624 (monogr.).—FINSCH, Verh. k. k. Gesellsch. Wien, 1871, 751, 752 (monogr.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 428, pl. 19, fig. 5.—SALVIN, Ibis, 1874, 327.—COUES, Birds Col. Val., 1878, 197, footnote (synonymy); Check List, 2d ed., 1882, no. 153.—CORY, Birds Bahama I., 1880, 76; Auk, iii, 1886, 47; Birds W. I., 1889, 61.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 159; Proc. U. S. Nat. Mus., viii, 1885, 27, 29 (diagnosis; synonymy).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 37 (Inagua and New Providence, Bahamas).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 635.

[*Certhiola*] *bahamensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.—BAIRD, Am. Nat., vii, 1873, 611.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 427.—CORY, List Birds W. I., 1885, 9.

*Certhiola bahamensis* COUES, Key N. Am. Birds, 2d ed., 1884, 317.—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 27 (diagnosis); Man. N. Am. Birds, 1887, 480.

*Cæreba bahamensis* AMERICAN ORNITHOLOGISTS' UNION, Suppl. to Code and Check List, 1889, 23; Check List, 2d ed., 1895, no. 635.—CORY, Auk, viii, 1891, 37 (synonymy), 294 (New Providence), 295 (Berry Islands), 296 (Bimini), 297 (Caicas; Inagua), 298 (Abaco), 350 (Gt. Bahama, Abaco), 351 (Eleuthera, Inagua); ix, 1892, 48 (Maraguna; Watlings I.), 49 (Inagua); Cat. W. I. Birds, 1892, 17, 116, 127 (Great Bahama, Abaco, Bimini, Berry, Eleuthera, New Providence, Andros, San Salvador, Exuma Keys, Great Exuma, Concepcion, Watlings, Rum Cay, Long, Green Cay, Maraguna, N. Caicos, Grand Caicos, E. Caicos, Little Inagua and Great Inagua islands, Bahamas).—NORTHROP, Auk, viii, 1891, 70 (Andros I.).—RIDGWAY, Auk, viii, 1891, 334 (Abaco), 335 (New Providence), 336 (Eleuthera; San Salvador), 337 (Watlings I.), 338 (Rum Cay; Green Cay), 339 (Concepcion).

*Cæreba bahamensis* RIDGWAY, Man. N. Am. Birds, 2d ed., 1896, 480.

*Certhiola bairdii* CABANIS, Journ. für Orn., xiii, Nov., 1865 (pub. Jan., 1866), 412 (Indian Key, Florida; coll. U. S. Nat. Mus.).—SUNDEVALL, Öfv. K. Vet. Ak. Förh. Stockh., 1869, 621 (monogr.).

[*Certhiola*] *bairdi* GRAY, Hand-list, i, 1869, 120, no. 1506.

## CEREBIA CABOTI (Baird).

## COZUMEL BANANAQUIT.

Similar to *C. bahamensis*, but black loreal streak broader (at least as wide as the white above it) and continued backward broadly beneath eye; white superciliary streak much narrower; white of throat extended over only upper part of chest; yellow of breast continued backward over flanks, and even tinging anal region and lower tail-coverts; yellow of rump tinged with olive, upper parts in general averaging somewhat darker, and white tips to lateral rectrices much smaller (that on outermost rectrix not more than 7.6 long, usually much less) and mostly confined to inner web.

*Adult male*.—Length (skins), 108–121.9 (113.8); wing, 60.7–63 (61.7); tail, 40.6–42.4 (41.4); exposed culmen, 13.7–14.7 (14.5); tarsus, 17.8–18.5 (18.3); middle toe, 11.4–12.4 (11.9).<sup>1</sup>

*Adult female*.—Length (skins), 105.2–112 (108.7); wing, 55.9–58.7 (57.7); tail, 35.1–38.6 (36.8); exposed culmen, 13.7–14.2 (14); tarsus, 17.5–18.3 (17.8); middle toe, 11.4–11.9 (11.7).<sup>2</sup>

Island of Cozumel, Yucatan.

*Certhiola caboti* "Baird (MS.)" FINSCH, Vehr. k. k. Gesellsch. Wien, 1871, 790, note (*nomen nudum*).—BAIRD, Am. Nat., vii, Oct., 1873, 612 (Cozumel Island, Yucatan; coll. Dr. S. Cabot); in Hist. N. Am. Birds, i, 1874, 427; iii, 1874, 508.—SALVIN, Ibis, 1874, 327 (crit.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 251, pl. 15a, fig. 4.—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 29 (synonymy), 564 (crit.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 38.

[*Certhiola*] *caboti* BAIRD, Am. Nat., vii, Oct., 1873, 611 (Cozumel Island, Yucatan; coll. Dr. S. Cabot, jr.).

[*Certhiola*] *caboti* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 27 (diagnosis); Man. N. Am. Birds, 1886, 480.

Islands of Grand Cayman, Little Cayman, and Cayman Brac,<sup>1</sup> Greater Antilles (south of Cuba).

*Certhiola sharpei* CORY, Auk, iii, Oct., 1886, 497 (Grand Cayman, Greater Antilles; coll. C. B. Cory), 501 (do.); v, 1888, 157 (do.); vi, 1889, 31 (Little Cayman; Cayman Brac); Birds West Indies, 1889, 288.—RIDGWAY, Proc. U. S. Nat. Mus., x, 1887, 574 (Grand Cayman).

*Cœreba sharpei* CORY, Auk, viii, Jan., 1891, 37 (Grand Cayman; Little Cayman; Cayman Brac); Cat. W. I. Birds, 1892, 17, 116, 129, 154 (do.).

### COEREBE TRICOLOR (Ridgway).

#### OLD PROVIDENCE BANANAQUIT.

Similar to *C. caboti*, but larger (except bill and toes), white at base of primaries more extended, white tips to lateral rectrices much larger (about 12.7 long on outermost rectrix) and including both webs, black on lores and beneath eyes much narrower, and white superciliary stripe much broader; in the last two characters agreeing with *C. bahamensis*.

*Adult male*.—Above dull black, including the whole of the exposed portion of the tertials and secondaries; a broad and very distinct superciliary stripe of pure white, extending from the nostrils to the occiput; primaries with a large basal spot of white, extending for about 10.2 mm. beyond the ends of the coverts; basal half of inner web of all the secondaries pure white; three outermost rectrices broadly tipped with white; lower half of rump lemon yellow; broad band on side of head, involving lores and auriculars, and passing beneath but not above the eye, black, this band much narrower anteriorly, and gradually widening posteriorly, where confluent with the black of the nape; a small black line along the lower edge of the rictus; chin, throat, chest and cheeks uniform grayish white; whole breast and upper part of abdomen lemon yellow, changing to olive-gray on the flanks and dull yellowish white on anal region and under tail-coverts; under wing-coverts pure white, the bend bright yellow; bill deep black; feet dusky. Length (skin), 115.6; wing, 65.5–65.8; tail, 45.2–47; culmen, 13.7–14.2; depth of bill at base, 5.1; tarsus, 19.6; middle toe, 11.7.<sup>2</sup>

*Young*.—Above dull grayish brown, the back indistinctly clouded with dusky, the forehead mostly dull black (new feathers); rump, dingy olive-yellow; an indistinct superciliary stripe of pale dingy yellow, becoming nearly white anteriorly; a narrow loreal stripe of

<sup>1</sup>The single specimen examined from Cayman Brac is obviously different in coloration from the five Grand Cayman examples, being much browner (deep hair brown) above, and the yellow of breast and rump inclining more to chrome; but to what extent these differences are due to difference of season (the Cayman Brac specimen was collected in March, those from Grand Cayman in May and July) it is of course impossible to tell without a sufficient series.

<sup>2</sup>Two specimens.

dusky passing beneath the eye, but changing to dull grayish brown, and continuing, broadly, over the auriculars to the nape; lower parts dingy olive-yellow, brighter on the breast and upper part of abdomen; anal region and under tail-coverts pale buffy yellowish; lining of wing pure white, changing to yellow along the edge of the wing; wing speculum smaller than in the adult, but still very conspicuous.

Island of Old Providence (and St. Andrews?), Caribbean Sea.

*Certhiola tricolor* RIDGWAY, Proc. U. S. Nat. Mus., vii, July 29, 1884, 178 (island of Old Providence, Caribbean Sea; coll. U. S. Nat. Mus.); viii, 1885, 29 (synonymy).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 38.—CORY, Auk, iv, 1887, 180 (Old Providence).

*C[erthiola] tricolor* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 27 (diagnosis).

(?) *Certhiola tricolor* CORY, Auk, iv, 1889, 181 (St. Andrews I., Caribbean Sea).

*C[erereba] tricolor* CORY, Auk, viii, Jan., 1891, 40.

#### CCEREBA LUTEOLA (Cabanis).

##### TOBAGO BANANAQUIT.

*Adults (sexes alike).*—Upper parts plain sooty black, relieved by a white superciliary stripe (extending from nostril to occiput), a white spot (of variable extent) at base of six or seven outermost primaries (except the outermost), and a large patch of clear lemon yellow covering rump; primaries narrowly edged with light grayish; inner webs of two lateral rectrices broadly tipped with white (about 7.6 long on outermost); loreal, suborbital, and auricular regions and sides of neck sooty black, like upper parts; malar region, chin, and throat uniform gray (no. 6, or between no. 5 and no. 6<sup>1</sup>); rest of under parts lemon yellow (sometimes tinged with or inclining to saffron yellow on chest), becoming paler on abdomen and passing or blending into yellowish gray

Caribbean coast district of Colombia and Venezuela; Trinidad; Tobago; Grenada.<sup>1</sup>

*Cæreba flaveola* (not *Certhia flaveola* Linnæus) VIEILLOT, Enc. Méth., ii, 1823, 611, part (description; see Finsch, Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 767).

*Certhiola flaveola* HARTLAUB, Isis, 1847, 612 (Trinidad)—SCLATER, Cat. Am. Birds, 1862, 54, part (Tobago).—LÉOTAUD, Ois. Trinidad, 1866, 126.

*C[erthiola] luteola* CABANIS, Mus. Hein., i, 1850, 96 (Puerto Cabello and Cumaná, Venezuela; Catagena, Colombia; coll. Berlin Mus.; ex *Nectarinia luteola* Lichtenstein, manuscript).—REICHENBACH, Handb., ii, 1853, 251, pl. 561, fig. 3822.—LICHTENSTEIN, Nom. Av. Mus. Berol., 1854, 56.

*Certhiola luteola* BONAPARTE, Compt. Rend., xxxviii, 1854, 259.—SCLATER, Cat. Am. Birds, 1862, 53, part (Trinidad); Cat. Birds Brit. Mus., xi, 1886, 40 (Santa Marta and Valle Dupar, Colombia; Carupano, Venezuela; Trinidad).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 271.—TAYLOR, Ibis, 1864, 81 (Trinidad).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1866, 179; 1868, 167 (Venezuela).—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 621 (monogr.).—FINSCH, Proc. Zool. Soc. Lond., 1870, 561 (Trinidad); Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 767 (monogr.).—WYATT, Ibis, 1871, 324.—SALVIN and GODMAN, Ibis, 1880, 119 (Santa Marta, Colombia).—BERLEPSCH, Ibis, 1884, 432 (Angostura, Venezuela).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 29 (synonymy).

[*Certhiola*] *luteola* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.—BAIRD, Am. Nat., vii, 1873, 611 (monogr.); in Hist. N. Am. Birds, i, 1874, 427.

*C[erthiola] luteola* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).

*Cæreba luteola* CORY, Auk, viii, Jan., 1891, 38 (Grenada, Lesser Antilles; Tobago; Trinidad; Venezuela; n. coast Colombia); Cat. W. I. Birds, 1892, 116, 154.—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 25 (Trinidad; habits; descr. nest).—ROBINSON, Proc. U. S. Nat. Mus., xviii, 1896, 685 (La Guayra, Venezuela).—RICHMOND, Proc. U. S. Nat. Mus., xviii, 1896, 679 (Margarita I., Venezuela).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 143 (Santa Marta, Colombia).—STONE, Proc. Ac. Nat. Sci. Phila., 1899, 313 (near Cartagena, Colombia).

and *C. mexicana*. It probably represents the form described by Salvadori and Festa, under the name *Certhiola intermedia*, the synonymy of which is as follows:

*Certhiola luteola* (not of Cabanis) SCLATER, Proc. Zool. Soc. Lond., 1858, 452 (Zamora and Gualaquiza, e. Ecuador); Cat. Am. Birds, 1862, 53, part (do.).

*Certhiola mexicana* (not of Sclater, 1856) SCLATER, Cat. Birds Brit. Mus., xi, 1886, 38, part (Zamora and Gualaquiza, e. Ecuador).

(?) *Certhiola peruviana* CABANIS, Journ. für Orn., 1865, 413.

[*Certhiola*] *peruviana* BAIRD, Am. Nat., vii, 1873, 613; in Hist. N. Am. Birds, i, 1874, 428.

*Certhiola intermedia* SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 357, Aug., 1899, 13 (Valle del Zamora and Gualaquiza, e. Ecuador; coll. Turin Mus.?).

<sup>1</sup> I give Grenada for the species on the authority of Mr. Cory. The only example of *Cæreba* from that island in the National Museum collection, except the uniformly black *C. wellsi* Cory, is apparently *C. saccharina*; at least it agrees fairly well with our single example of that form, and is conspicuously different from *C. luteola* in its very dark (blackish slate) throat, yellowish olive (instead of clear yellow) rump, and brownish slaty (instead of sooty black) back. I have referred it, provisionally, to *C. saccharina*.

- (?) [*Certhiola*] *major* CABANIS, Mus. Hein., i, 1851, 97, footnote<sup>1</sup> ("Guiana," location of type not mentioned).—REICHENBACH, Handb., ii, 1853, 252 (Guiana).—BONAPARTE, Compt. Rend., xxxviii, 1854, 259.—BURMESTER, Syst. Veb. Th. Bras., iii, 1856, 156.—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 622 (monogr.).
- (?) [*Certhiola*] *major* GRAY, Hand-list, i, 1869, 120, no. 1502.
- (?) [*Certhiola*] *minor* BONAPARTE, Compt. Rend., xxxviii, 1854, 259 (locality not given; coll. Paris Mus.); Notes Orn. Coll. Delattre, 1854, 51.—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 622 (monogr.).—FINSCH, Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 790, footnote.
- Certhiola godmani* CORY, Auk, vi, July, 1889, 219 (Grenada, Lesser Antilles; coll. C. B. Cory).

#### CCERIBA CERINOCLUNIS Bangs.

SAN MIGUEL BAHAMAQUIT.

Similar to *C. luteola*, but throat paler gray (much as in *C. mexicana*), rump less purely yellow and white tips to lateral rectrices much smaller; similar to *C. mexicana* in color of throat, but upper parts sooty black (as in *C. luteola*), white wing-spot large and conspicuous (as in *C. luteola*), lower rump brighter yellowish, and under parts brighter yellow.

*Adults (sexes alike).*—Above plain sooty black, the rump olive-yellow becoming purer yellow below; a large and conspicuous spot of white at base of four or five primaries next to the outermost; inner webs of lateral rectrices tipped with white for about 2.5–5.1 in males, much less (sometimes a mere edging) in females; a broad white superciliary stripe, extending from nostril to end of auricular region, or beyond; loreal, suborbital, and auricular regions and sides of neck sooty black; malar region, chin, and throat gray (about the same tone as in *C. mexicana*); rest of under parts bright lemon yellow (rather



*Adult male*.—Length (skins), 99.1; wing, 58.9–59.7 (59.2); tail, 35.6–38.1 (36.8); exposed culmen (one specimen), 12.2; tarsus, 16.3–16.5; middle toe, 10.4–10.9 (10.7).<sup>1</sup>

*Adult female*.—Length (skin), 91.4; wing, 52.6; tail, 31; exposed culmen, 12.4; tarsus, 15.2; middle toe, 9.7.<sup>2</sup>

Island of San Miguel, Bay of Panama, Colombia.

*Cæreba mexicana columbiana* (not *Certhiola columbiana* Cabanis) BANGS, Auk, xviii, Jan., 1901, 30 (San Miguel I., Bay of Panama).

*Cæreba cerinochunis* BANGS, Proc. New Engl. Zool. Club, ii, Feb. 8, 1901, 52 (San Miguel I., Bay of Panama; coll. E. A. and O. Bangs).

### CCEREBÀ MEXICANA (Sclater).

#### MEXICAN BANANAQUIT.

*Adults (sexes alike)*.—Pileum uniform sooty blackish, margined on each side by a superciliary stripe of white, extending from nostril to occiput; hindneck, back, scapulars, and upper tail-coverts plain grayish olive, the wings and tail similar but slightly darker, with grayish olive edgings; outer webs of four or five outermost primaries white at base, usually showing as a spot, sometimes of considerable extent, beyond tips of primary-coverts, sometimes wholly concealed by the latter; inner webs of lateral rectrices tipped with white, forming on the outermost a spot of variable size; rump olive-yellow, or light yellowish olive-green; loreal and auricular regions dusky or sooty, forming a broad stripe on sides of head; malar region, chin, and throat uniform light gray (no. 6 or no. 7);<sup>3</sup> rest of under parts lemon yellow, more or less tinged with olive, especially on sides, the flanks light yellowish olive, the under tail-coverts dull whitish with pale grayish concealed bases; under wing-coverts white, the edge of wing pale yellow; bill blackish, the mandible usually more or less brownish basally; legs and feet dusky horn color (in dried skins); length (skins), 79.2–98.3 (90.4); wing, 51.3–59.9 (55.1); tail, 25.1–36.1 (31.8); exposed culmen, 11.7–14 (13.2); tarsus, 15.7–17.3 (16.3); middle toe, 10.4–11.7 (10.9).<sup>4</sup>

<sup>1</sup> Two specimens.

<sup>2</sup> One specimen.

<sup>3</sup> Ridgway's Nomenclature of Colors, pl. 2.

<sup>4</sup> Twenty-three specimens. Unfortunately so few of these have the sex determined that I am not able to give measurements of the sexes separately.

Average measurements according to locality are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
Four adults from Mexico.....	55.6	33.5	12.4	16.8	10.7
Six adults from Guatemala.....	54.9	31.8	13.2	16.3	10.7
Eight adults from Nicaragua, Costa Rica, and Panama.....	54.1	30.7	13.7	16.8	11.4
Five adults from Colombia (Bogota).....	56.1	32.5	12.7	16.8	10.9

*Young*.—Above plain olive, darker on pileum, paler posteriorly, the lower rump pale yellowish olive-green or olive-yellowish; an indistinct superciliary stripe of pale yellowish olive; under parts, including throat, olive-yellow, paler on lower abdomen and under tail-coverts, the latter inclining to pale buffy.

Southern Mexico (States of Vera Cruz, Oaxaca, etc.) through Central America and Pacific coast of northern South America to Ecuador.<sup>1</sup>

*Certhiola mexicana* SCLATER, Proc. Zool. Soc. Lond., 1856, 286 (s. Mexico)<sup>2</sup>; 1859, 364 (Jalapa, Vera Cruz), 376 (Playa Vicente, Oaxaca), Cat. Am. Birds, 1862, 54 (Jalapa; Choctum, Guatemala); Cat. Birds Brit. Mus., xi, 1886, 38, part (Jalapa; Choctum; Turrialba, Costa Rica; Bugaba and Cordillera del Chucu, Veragua; Lion Hill and Paraiso Station, Panama R. R.; Gorgona I., Bogota and Medellin, Colombia; Quito, Intaj, and Esmeraldas, w. Ecuador).—SALVIN, Ibis, 1861, 352 (Choctum, Guatemala); (?) Novit. Zool., ii, 1895, 4 (Cajamaica, etc., Peru, 5,500–9,200 ft.).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 271 (monogr.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 349 (Panama R. R.), 1879, 497 (Antioquia, Colombia).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 98 (Turrialba and Atenas, Costa Rica).—FRANTZIG, Journ. für Orn., 1869, 297 (Costa Rica).—SUNDEVALL, Öfv. K. Vet.-Ak. Förh. Stockholm, 1869, 622, 623 (monogr.).—FINSCH, Verh. K. zool.-bot. Gesellsch. Wien, 1871, 772 (monogr.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1883, 250, part.—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, 543 (Chimbo, w. Ecuador; crit.).—BERLEPSCH, Journ. für Orn., 1884, 288 (Bucaramanga, Colombia).

[*Certhiola mexicana* GRAY, Hand-list, i, 1869, 120, no. 1500.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.—BAIRD, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 428.

*C[erthiola] mexicana* RIDGWAY, Man. N. Am. Birds, 1887, 480.

[*Certhiola mexicana*] *a. mexicana* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 27, 28 (diagnosis; synonymy).

*Certhia mexicana* ZELEDON, An. Mus. Nac. Costa Rica, i, 1887, 108 (Naranjo de  
Cortés, Nariño, Patate, Riosucio, Pácora, I. S. Nat. Mus., xiv, 1893,

*Certhiola columbiana* CABANIS, Journ. für Orn., xiii, Nov., 1865 (pub. Jan., 1866), 412 (Bogota, Colombia; coll. Berlin Mus.).—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 622 (monogr.)—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 357, 1899, 13 (Gualea, Foreste del Peripa, etc., w. Ecuador; crit.).

[*Certhiola*] *columbiana* GRAY, Hand-list, i, 1869, 120, no. 1507.

*Certhiola mexicana columbiana* BERLEPSCH, Journ. für Orn., xxxii, April, 1884, 276 (Bucaramanga, Colombia).

[*Certhiola mexicana*] *β. columbiana* RIDGWAY, Proc. U. S. Nat. Mus., viii, Apr. 20, 1885, 27, 29 (diagnosis; synonymy).

*C[œreba] mexicana columbiana* CORY, Auk, viii, Jan., 1891, 41.

### COEREBA BANANIVORA (Gmelin).

#### HAITIAN BANANAQUIT.

Similar to *C. mexicana*, but throat decidedly darker, rump clear yellow (abruptly defined anteriorly), white wing-spot much larger, and bill much smaller.

*Adult (sexes alike).*—Pileum dark sooty brown (clove brown or very dark sepia); rest of upper parts (except rump) similar but more or less distinctly paler; lower rump canary yellow, forming an abruptly defined broad band or transverse patch; a white patch at base of four or five primaries next to the outermost; inner webs of lateral rectrices more or less broadly tipped with white (this sometimes 6.3 in extent on outermost rectrix); a white superciliary stripe, extending from nostril to end of auricular region; loreal, suborbital, and auricular regions dark sooty brown, like pileum; malar region, chin, and throat uniform mouse gray or brownish slate-gray; chest, breast, and upper abdomen lemon or gamboge yellow, changing on flanks into yellowish olive-gray and on lower abdomen into pale yellow, the under tail-coverts white or yellowish white, with basal (concealed) portions brownish gray; bill blackish; legs and feet (in dried skins) dusky horn color.

*Young.*—Above plain brownish olive, including pileum and rump, the latter scarcely, if at all, tinged with yellow; superciliary stripe narrow and indistinct, pale dirty yellowish instead of white; under parts, including throat, pale dull yellowish, more or less tinged with olive, especially on chest, sides, and flanks, deepest on the first; breast and abdomen more or less tinged or mixed with brighter yellow.

*Adult male.*—Length (skin), 95.5; wing, 57.2; tail, 36.3; exposed culmen, 12.2; tarsus, 16.5; middle toe, 10.2.<sup>1</sup>

*Adult female.*—Length (skins), 92.7–96.5 (94.7); wing, 53.6–56.4 (55.1); tail, 31.5–35.6 (33.5); exposed culmen, 11.9; tarsus, 15.2–16.8 (16); middle toe, 10.2–11.2 (10.7).<sup>2</sup>

Island of Haiti, Greater Antilles.

<sup>1</sup> One specimen.

<sup>2</sup> Two specimens.

- [*Motacilla*] *bananivora* GMELIN, Syst. Nat. i, pt. ii, 1788, 951 (St. Domingo; based on *Bananiste* Buffon, Hist. Nat. Ois., v, 332; *Banana Warbler* Latham, Synop. Birds, ii, pt. ii, 498).
- Certhiola bananivora* BRYANT, Proc. Bost. Soc. N. H., xi, 1865, 95 (Santo Domingo).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 30 (synonymy).—CORY, Birds Haiti and San Dom., 1885, 41, pl. [21] fig. 1; List Birds W. I., 1885, 9; Auk, iii, 1886, 49; Birds W. I., 1889, 63.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 40 (Samana, Santo Domingo).
- [*Certhiola*] *bananivora* BAIRD, Am. Nat., vii, 1873, 611 (monogr.); in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 427.
- [*Certhiola*] *bananivora* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).
- Cereba bananivora* CORY, Auk, viii, Jan., 1891, 38; Cat. W. I. Birds, 1892, 17, 116, 131.—CHEERIE, Contr. Orn. San Dom., 1896, 12.
- Certhiola clusiae* HARTLAUB, Naumannia, ii, Heft. 2, 1852, 56 (*nomen nudum*; ex Herz von Wurtemberg, manuscript).—FINSCH, Verh. k. k. zool.-bot. Gesellsch. Wien, xxi, 1871, 771 (monogr.).
- [*Certhiola*] *clusiae* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.
- Certhiola clusiae* CORY, Bull. Nutt. Orn. Club, vi, 1881, 151.
- Certhia luteola* var. B. BECHSTEIN, Lath. Ueb., i, 1793, 602 (based on *Bananiste* Buffon, Hist. Nat. Ois., v, 332).
- Certhiola* ———? SCLATER, Proc. Zool. Soc. Lond., 1857, 233 (Haiti).

#### CCEREBIA PORTORICENSIS (Bryant).

##### PORTO RICAN BANANAQUIT.

Similar to *C. bananivora*, but larger; upper parts darker and less brownish; throat clearer slate-gray; white tips to inner webs of lateral rectrices much larger, and white wing-patch more truncated posteriorly.

*Adults (sexes alike).*—Above plain sooty blackish or very dark sooty olive, the rump (abruptly) canary yellow, sometimes tinged with olive; a white patch at base of four or five primaries next to the outermost; inner webs of lateral rectrices broadly tipped with white, this 7.6–11.4

*Adult male*.—Length (skins), 99.6–124.7 (107.2); wing, 54.4–61.5 (58.9); tail, 35.8–41.9 (39.1); exposed culmen, 13.2–15 (14); tarsus, 15.7–17.8 (17); middle toe, 10.7–11.7 (11.2).<sup>1</sup>

*Adult female*.—Length (skins), 96.3–105.2 (100.3); wing, 53.6–55.9 (54.9); tail, 35.1–37.6 (36.1); exposed culmen, 13.2–15 (14); tarsus, 16–17.5 (16.8); middle toe, 9.7–11.2 (10.4).<sup>2</sup>

Islands of Porto Rico, Vieques, Culebra, Anegada, Tortola, Virgin Gorda, St. Thomas, and St. Johns, Greater Antilles.<sup>3</sup>

*Cæreba flaveola* (not *Certhia flaveola* Linnæus) VIEILLOT, Enc. Méth., ii, 1823, 611, part (Porto Rico).

*Nectarinia flaveola* MORITZ, Wiegmann's Archiv. für Naturg., ii, 1836, 387.

*Certhiola flaveola* SCLATER, Cat. Am. Birds, 1862, 54, part (St. Thomas).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 271 (St. Thomas).—TAYLOR, Ibis, 1864, 166 (Porto Rico).

*Certhiola* (from St. Thomas) NEWTON, Ibis, 1859, 68.

*Certhiola flaveola*. Var. *portoricensis* BRYANT, Proc. Bost. Soc. Nat. Hist., x, Jan., 1866, 252 (Porto Rico; coll. U. S. Nat. Mus.); Journ. für Orn., 1866, 185.—NEWTON, Zool. Rec., 1866, 88.

*Certhiola portoricensis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 598, 622 (monogr.).—FINSCH, Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 760 (monogr.).—GUNDLACH, Journ. für Orn., 1874, 312 (Porto Rico); 1878, 179 (do.); Anal. Soc. Esp. Hist. Nat., vii, 1878, 216 (do.).—RIDGWAY, Proc. U. S. Nat. Mus., vii, 1884, 172 (St. Thomas); viii, 1885, 29 (synonymy).—CORY, Auk, iii, 1886, 48 (Porto Rico; St. Thomas); Birds W. I., 1889, 62 (do.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 41 (Porto Rico).

[*Certhiola*] *portoricensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16 (Porto Rico; St. Thomas).—BAIRD, Am. Nat., vii, 1873, 611 (Porto Rico; St. Thomas); in Hist. N. Am. Birds, i, 1874, 427 (do.).—CORY, List Birds W. I., 1885, 9 (Porto Rico; St. Thomas).

C[*erthiola*] *portoricensis* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).

*Cæreba portoricensis* CORY, Auk, vii, Oct., 1890, 347 (St. Thomas), 375 (Tortola; Virgin Gorda); viii, 1891, 38 (Porto Rico; Culebra; Anegada; Tortola; Virgin Gorda; St. Thomas; St. John); Cat. W. I. Birds, 1892, 116 (do.).

<sup>1</sup> Twelve specimens.

<sup>2</sup> Eight specimens.

Specimens from different islands average as follows:

Locality.	Wing.	Tail.	Exposed culmen.	Tarsus.	Middle toe.
MALES.					
Six adult males from Porto Rico .....	59.4	38.1	14.2	17.5	11.2
Six adult males from Vieques .....	58.7	40.1	14	16.8	11.2
One adult male from St. Johns .....	59.4	40.1	14	18	11.9
FEMALES.					
Six adult females from Porto Rico.....	55.1	36.1	14.2	16.8	10.4
Two adult females from Vieques.....	55.1	36.1	13.2	16.3	10.4
One adult female from St. Johns .....	52.8	33.8	13.7	16.5	11.2
SEX UNDETERMINED.					
Five adults from St. Thomas .....	57.4	38.9	14.2	16.8	10.9

<sup>3</sup> Only specimens from Porto Rico, Vieques, St. Thomas, and St. Johns seen by me.

*Certhiola st. thomae* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 621 (St. Thomas).

*Certhiola sancti-thomae* RIDGWAY, Proc. U. S. Nat. Mus., viii, Apr. 20, 1885, 28 (St. Thomas, Greater Antilles; coll. U. S. Nat. Mus.).—SCLATER, Cat. Am. Birds, xi, 1886, 42.—CORY, Auk, iii, 1886, 48; Birds W. I., 1889, 62.

### CCEREBIA FLAVEOLA (Linnaeus).

#### JAMAICAN BANANAQUIT.

Similar to *C. portoricensis*, but throat much darker, white wing-patch much larger and continued along edges of primaries, breast duller (more brownish) yellow, and color of back, etc., still blacker.

*Adults (sexes alike).* Upper parts (except rump) black or sooty black; rump (abruptly) clear lemon yellow; a large white patch at base of five or six outermost primaries, the white extending for a considerable distance along edges of the quills; lateral rectrices very broadly tipped with white (on both webs), the white 7.6–12.7 in extent on outermost rectrix; a broad superciliary stripe of white, extending from nostril to end of auricular region; loreal, suborbital and auricular regions black; malar region, chin, throat, and upper chest blackish slate; breast brownish yellow or wax yellow, the rest of under parts lemon yellow, becoming paler posteriorly, the under tail-coverts white or yellowish white, with basal (concealed) portion slaty; bill black, usually becoming somewhat horn colored basally; legs and feet dusky (in dried skins).

*Adult male.*—Length (skins), 93–99.3 (95.8); wing, 54.4–57.4 (56.1); tail, 33.3–37.8 (35.8); exposed culmen, 11.9–13.5 (12.4); tarsus, 16–16.5 (16.3); middle toe, 9.7–10.9 (10.4).<sup>1</sup>

*Adult female.*—Length (skin), 100.0; wing, 59.9; tail, 38.1; exposed

- Certhiola flaveola* GOSSE, Birds Jamaica, 1847, 84; Illustr. Birds Jam., 1849, pl. 16.—BONAPARTE, Compt. Rend., xxxviii, 1854, 259.—REICHENBACH, Handb., ii, 1853, 250, pl. 561, fig. 3823.—BURMEISTER, Syst. Ueb. Th. Bras., iii, 1856, 156.—SCLATER, Proc. Zool. Soc. London, 1861, 73; Cat. Am. Birds, 1862, 54, part (Jamaica); Cat. Birds Brit. Mus., xi, 1886, 43.—ALBRECHT, Journ. für. Orn., 1862, 196.—MARCH, Proc. Acad. Nat. Sci. Phila., 1863, 296.—CASSIN, Proc. Acad. Nat. Sci. Phila., 1864, 271.—NEWTON, Zool. Record, 1864, 76.—CABANIS, Journ. für. Orn., 1865, 412.—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 621 (monogr.).—FINSCH, Verh. k. k. zool.-bot. Gessellsch. Wien, 1871, 756 (monogr.).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 30 (synonymy).—CORY, Auk, iii, 1886, 50; Birds W. I., 1889, 64.
- [*Certhiola*] *flaveola* BONAPARTE, Consp. Av., i, 1850, 402, part.—GRAY, Hand-list, i, 1869, 120, no. 1497.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.—BAIRD, Am. Nat., vii, 1873, 610; in Hist. N. Am. Birds, i, 1874, 427.—CORY, List Birds W. I., 1885, 9.
- [*Certhiola*] *flaveola* NEWTON (A. and E.), Handb. Jamaica, 1881, 103.—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).
- Cœreba flaviola* CORY, Cat. W. I. Birds, 1892, 17, 116, 130.

### COEREBA SACCHARINA (Lawrence).

#### ST. VINCENT BANANAQUIT.

Similar to *C. luteola* but back, etc., dusky brownish slate instead of black, rump light yellowish olive or olive-yellowish instead of clear lemon yellow, white superciliary stripe much broader (especially anteriorly), and throat dark slate or blackish slate instead of slate-gray.

*Adult (sexes alike).*—Pileum uniform sooty black, margined on each side by a broad superciliary stripe of pure white, extending from nostril to sides of occiput; rest of upper parts plain dusky brownish slate, the rump light yellowish olive or olive-yellowish (as in *C. chloropyga*); a white spot at base of longer primaries; inner webs of three outermost rectrices broadly tipped with white (about 5.8–7.1 in extent on lateral rectrix); loreal, suborbital, and auricular regions and sides of neck sooty black, like pileum; malar region, chin, and throat uniform dark slate or blackish slate; rest of under parts lemon yellow, more or less tinged with olive, especially on sides, the flanks yellowish olive-gray, the under tail-coverts dull white; axillars and under wing-coverts dull white; bill black; legs and feet dusky brownish (in dried skins).

*Adult female.*—Length (skins), 102.1–115.3 (108.7); wing, 55.6–56.6 (56.1); tail, 34.3–34.8 (34.5); exposed culmen, 12.2–13.5 (12.7); tarsus, 17.8; middle toe, 10.9–11.2.<sup>1</sup>

Islands of St. Vincent and Grenada,<sup>2</sup> Lesser Antilles.

<sup>1</sup> Two specimens; one from St. Vincent, the other from Grenada.

<sup>2</sup> With only a single specimen each from St. Vincent and Grenada, I am not able to judge whether the birds from the two islands really differ or not. Both specimens are marked “♀,” but that from St. Vincent with an interrogation point. The

*Certhiola saccharina* LAWRENCE, ANN. N. Y. Acad. Sci., i, June, 1878, 151 (St. Vincent, Lesser Antilles; coll. U. S. Nat. Mus.); Proc. U. S. Nat. Mus., i, 1878, 190, 487 (St. Vincent).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 30, (synonymy; St. Vincent; "Grenada").—CORY, Auk, iii, 1886, 50 (St. Vincent; "Grenada"); Birds W. I., 1889, 64 (do.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 42 (St. Vincent; "Grenada").—WELLS, Proc. U. S. Nat. Mus., ix, 1888, 613 (not in Grenada, but on islands immediately northward—Ile de Rhonde, Carriacou, etc.).

*C[erthiola] saccharina* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis), [*Certhiola saccharina* CORY, List Birds W. I., 1885, 9.

*Careba saccharina* CORY, Auk, viii, Jan., 1891, 39 (St. Vincent); Cat. W. I. Birds, 1892, 17, 116, 134 (do.).

#### CAEREBE NEWTONI (Baird).

##### ST. GREGORY BANANAQUIT.

Similar to *C. flaveola*, but white wing-patch truncated posteriorly, yellow of rump tinged with olive, and tarsus longer and stouter.

This form I have not seen. According to a manuscript description of Professor Baird's, it "has a tinge of ochraceous in the yellow of the breast, as in the Jamaican bird [*C. flaveola*], and like it the throat, though rather lighter, is so dark as not to present any contrast with the black of the cheeks. The rump is more olivaceous-green, not yellow. The white patch at base of primaries is quadrate, as in the St. Thomas bird [*C. portoricensis*], without involving the outer webs.' The legs are stouter than in either, the tarsus decidedly longer (17.8 in six specimens). In one specimen the white of superciliary stripe is confluent across the forehead, but not in the others. Young specimens have this stripe yellow, white behind, the throat feathers edged with olivaceous-green."

Professor Baird gives the measurements of No. 39380, male adult



## Island of St. Croix, Greater Antilles.

*Certhiola flareola* (not *Certhia flaveola* Linnæus) NEWTON (A. and E.), *Ibis*, 1859, 67, pl. 12, fig. 3, egg (St. Croix).—SCLATER, *Cat. Am. Birds*, 1862, 54, part (St. Croix).—SUNDEVALL, *Öfv. k. Vet.-Ak. Förh. Stockh.*, 1869, 623, part (St. Croix).

[*Certhiola*] *newtoni* BAIRD, *Am. Nat.*, vii, Oct., 1873, 611 (St. Croix, Greater Antilles; coll. U. S. Nat. Mus.); in *Hist. N. Am. Birds*, i, 1874, 427.—CORY, *List Birds West Indies*, 1885, 9.

*Certhiola newtoni* BAIRD, BREWER, and RIDGWAY, *Hist. N. Am. Birds*, iii, 1874, 508.—RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 30 (synonymy).—SCLATER, *Cat. Birds Br. t. Mus.*, xi, 1886, 43.—CORY, *Auk*, iii, 1886, 51; *Birds W. I.*, 1889, 65.

[*Certhiola*] *newtoni* RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 28 (diagnosis).

*Careba newtoni* CORY, *Auk*, viii, Jan., 1891, 39, 48; *Cat. W. I. Birds*, 1892, 17, 116, 132.

*Certhiola bartolemica* (not *Certhia bartolemica* Sparrmann) FINSCH, *Verh. k. k. zool.-bot. Gesellsch. Wien*, 1871, 763, part (St. Croix).

[*Certhiola*] *bartolemica* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 16, part (St. Croix).

[*Certhiola*] *bartholemica* CORY, *List Birds W. I.*, 1885, 9, part (St. Croix).

## CÆREBA DOMINICANA (Taylor).

## DOMINICAN BANANAQUIT.

Similar to *C. portoricensis*, but throat much darker (much as in *C. flareola*); yellow rump-patch absent, the lower rump being merely tinged with yellowish olive-green or olive-yellowish; white wing-spot obsolete or altogether wanting; general color of upper parts not so dark (on average), and white superciliary stripe narrower.

*Adults (sexes alike)*.—Upper parts plain sooty olive, nearly black on pileum, the back, etc., sometimes inclining to sooty slate, the lower rump more or less strongly tinged with yellowish olive-green or olive-yellowish, but without a well-defined patch of this color; base of primaries without any white patch, or with a very minute one, the white barely showing beyond tips of primary coverts; inner webs of lateral rectrices broadly tipped with white, this 6.3–10.2 long on outermost rectrix; a rather narrow superciliary stripe of white (partly yellow in younger birds) extending from sides of forehead to end of auricular region, the forehead also sometimes white or grayish;<sup>1</sup> loreal, suborbital, and auricular regions sooty blackish; malar region, chin, and throat uniform slate color; rest of under parts lemon yellow, becoming paler and duller posteriorly, the under tail-coverts whitish, the flanks light olive-grayish tinged with yellow; bill black; legs and feet dusky horn color (in dried skins).

*Adult male*.—Length (skins), 103.6–121.4 (113.8); wing, 55.4–63.2 (58.9); tail, 38.1–42.7 (40.1); exposed culmen, 13–15 (14); tarsus, 17.3–19.8 (18.3); middle toe, 10.4–12.2 (11.4).<sup>2</sup>

<sup>1</sup> The superciliary stripe sometimes becomes obsolete anteriorly.

<sup>2</sup> Nine specimens.

*Adult female*.—Length (skins), 105.4–121.9 (112); wing, 53.8–58.4 (56.9); tail, 38.1–40.1 (39.4); exposed culmen, 13.2–14 (13.5); tarsus, 16.8–18.3 (17); middle toe, 10.7–12.4 (11.4).<sup>1</sup>

Islands of Dominica, Guadeloupe, Nevis, Barbuda, and Antigua (also Anguilla, Marie Galante, Desirade, St. Christopher, and Montserrat?<sup>2</sup>), Lesser Antilles.

*Certhiola dominicana* TAYLOR, Ibis, 1st ser., vi, Apr., 1864, 167 (Dominica, Lesser Antilles; coll. P. L. Sclater).—NEWTON, Zool. Rec., 1864, 76.—SUNDEVAL, Öf. v. K. Vet.-Ak. Förh. Stockh., 1869, 623 (monogr.).—FISCH, Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 787 (monogr.).—LAWRENCE, Proc. U. S. Nat. Mus., i, 1878, 56 (Dominica; descr. nest and eggs), 233 (Antigua), 239 (Barbuda); i, 1879, 455 (Guadeloupe; crit.).—SCLATER, Proc. Zool. Soc. Lond., 1879, 765 (Montserrat); 1889, 326 (Dominica); Cat. Birds Brit. Mus., xi, 1886, 44, pl. 5, fig. 2 (Dominica; Montserrat; Antigua; Barbuda).—GRISDALE, Ibis, 1882, 486 (Montserrat).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 30 (synonymy).—CORY, Auk, iii, 1886, 51; Birds W. I., 1889, 65.

[*Certhiola dominicana* GRAY, Hand-list, i, 1869, 120, no. 1505.—SCLATER and SALVIN, Nouv. Av. Neotr., 1873, 17.—BAIRD, Am. Nat., vii, 1873, 612 (monogr.); in Hist. N. Am. Birds, i, 1874, 428.—CORY, List Birds West Indies, 1885, 9.

[*Certhiola*] *dominicana* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).

*Cereba dominicana* CORY, Auk, vii, Oct., 1890, 374 (Anegada); viii, 1891, 39, part (Dominica; Marie Galante; Desirade; Barbuda; St. Christopher; Saba), 47 (Antigua), 48 (St. Christopher), 49 (Guadeloupe).

[*Cereba*] *dominicana* BERLEPSCH, Journ. für Orn., 1892, 78, 79, 80, in text.

[*Certhiola frontalis* BAIRD, Am. Nat., vii, Oct., 1873, 612 (Antigua, Lesser Antilles; coll. U. S. Nat. Mus.); in Hist. N. Am. Birds, i, 1874, 428.

*Certhiola frontalis* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, iii, 1874, 508.

*Certhiola sundevalli* RIDGWAY, Proc. U. S. Nat. Mus., viii, Apr. 20, 1885, 26 (Guadeloupe, Lesser Antilles; coll. U. S. Nat. Mus.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 44 (Dominica; Guadeloupe).

*Cereba bartolemei* (not *Certhia bartolemea* Sparrmann) CORY, Cat. W. I. Birds, 1892, p. 154, part.

*Cæreba bartholemica* CORY, Cat. W. I. Birds, 1892, 116, part (St. Christopher; Nevis; Barbuda; Antigua; Guadeloupe; Dominica).

CCEREBÀ BARTOLEMICA (Sparrmann).

ST. BARTHOLOMEW BANANAQUIT.

Similar to *C. dominicana*, but white wing-spot always (?) present and distinct, white superciliary stripe not extending anterior to eye, and size averaging larger.

*Adult male*.—Length (skins), 105.7–122.9 (114.8); wing, 56.1–61.5 (59.2); tail, 38.4–44.2 (41.4); exposed culmen, 13.7–15 (14.2); tarsus, 17.8–18.5 (18); middle toe, 11.4–12.2 (11.7).<sup>1</sup>

*Adult female*.—Length (skin), 101.1; wing, 51.6; tail, 36.3; tarsus, 17.3; middle toe, 11.4.<sup>2</sup>

Islands of St. Bartholomew, St. Eustatius, Anguilla and Saba, Lesser Antilles.

*Certhia bartolemica* SPARRMANN, Mus. Carls., fasc. iii, 1788, pl. 57 (St. Bartholomew, Lesser Antilles; coll. Carlson Mus.).—BECHSTEIN, Lath. Uebers., i, 1793, 611.

*Certhiola bartolemica* REICHENBACH, Handb., ii, 1853, 253.—SUNDEVALL, Krit. Fram. K. Vet.-Ak. Handl., Bd. 2, no. 3, 1857, 10; Öfv. K. Vet.-Ak. Förh. Stockh., 1869, 622 (monogr.).—FINSCH, Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 763 (monogr.).—SCLATER, Proc. Zool. Soc. Lond., 1892, 499 (Anguilla).

*Certhiola bartholemica* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 30 (references).—CORY, Auk, iii, 1886, 50; Birds W. I., 1889, 64.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 42.

[*Certhiola*] *bartolemica* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.

*Cæreba bartolemica* CORY, Auk, viii, Jan., 1891, 39, 46 (Anguilla); Cat. W. I. Birds, 1892, 17, 154, part (St. Bartholomew).

[*Certhiola*] *bartholemica* BAIRD, Am. Nat., vii, 1873, 611; in Hist. N. Am. Birds, i, 1874, 428.—CORY, List Birds West Indies, 1885, 9.

*C[erthiola] bartolemica* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).

*Cæreba bartholemica* CORY, Cat. W. I. Birds, 1892, 116, part (St. Bartholomew).

*C[erthia] flaveola* BECHSTEIN, Lath. Uebers., iv, 1811, 188, part (variety c).

[*Certhia flaveola*] var. *C.* LATHAM, Gen. Hist. Birds, iv, 1824, 284.

*Cæreba flaveola* (not *Certhia flaveola* Linnæus) VIEILLLOT, Enc. Méth., ii, 1823, 611, part (St. Bartholomew).

*C[erthiola] flaveola* GRAY, Gen. Birds, i, 1846, 102, part.—BONAPARTE, Consp. Av., i, 1850, 402, part.

<sup>1</sup> Four specimens.

<sup>2</sup> One specimen.

Specimens from different islands average in measurements as follows:

Locality.	Wing.	Tail.	Ex-posed culmen.	Tarsus.	Middle toe.
One adult male from St. Bartholomew .....	59.9	44.2	13.7	17.8	12.2
One adult male from St. Eustatius .....	61.5	41.9	.....	18	11.4
One adult male from Saba .....	56.1	38.4	15	18.5	11.4

Adult male.  
tion: lesser a  
sometimes sh  
and feet blue  
107.2 108; ta  
of bill at base

Adult female  
length (skins  
(77); culmen  
8.9 (8.6); fat

Young. —  
light buffy  
same color.

Immature  
broken post  
Island of

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more extensively and abruptly light yellowish; gray rictal streak less distinct, and sides of throat slate color instead of sooty black.

Upper mandible brownish gray, the rump tinged with light yellowish; lesser and greater wing-coverts tipped with pale yellow; primary stripe bright yellow, paler posteriorly; otherwise plain brownish gray, darker on lores, yellowish from rictus backward; sides of throat and throat-parts, including a median throat-stripe extending to throat, primary yellow, faintly tinged with pale olive laterally; white or pale buffy yellow on anal region and

Length (skins), 99.6-104.6 (102.1); wing, 60.7-61 (60.8); tail, 40.0-41.0 (40.5); exposed culmen, 12.4-14.2 (13.5); tarsus, 18.3-18.5 (18.4); middle toe, 11.7-11.9 (11.8).<sup>1</sup>

Curacao, Caribbean Sea.

*Curacao* BERLEPSCH, Journ. fur Orn., xxxx, Jan., 1892, 77 (Island of Curacao, Caribbean Sea; coll. E. Peters). ROBINSON, Flying Trip to Tropics, 1892, 116 (Curacao).

*Curacao* BERLEPSCH, Journ. fur Orn., 1892, 79, 81, in text.

*Curacao* PETERS, Journ. fur Orn., 1892, 116 (Curacao).

#### CÆREBA MARTINICANA (Reichenbach).

##### MARTINIQUE BANANAQUIT.

to *C. uropygialis*, but white throat-patch much more sharply defined; superciliary stripe shorter (scarcely reaching to end of auricular region), malar region and sides of throat uniform sooty black, like throat region, pileum, etc.; no gray rictal streak, and with less of yellow on rump.

*Curacao* (near *alike*).—Above dark sooty slate, sometimes inclining to blackish, especially on pileum, which is always perceptibly darker than back; lower rump more or less tinged with light yellowish or olive-yellowish, but without a distinct patch or band of that color; wing-coverts usually slightly tipped with pale grayish; no white on primaries, but their outer webs narrowly edged with grayish; webs of lateral rectrices broadly tipped with white; outer webs of rectrices about 6.5-7.9 in length; superciliary stripe white, extending to end of throat; throat uniform sooty black; sides of throat and throat-parts, including a median throat-stripe extending to throat, primary yellow, faintly tinged with pale olive laterally; white or pale buffy yellow on anal region and

anal region and under tail-coverts whitish; bill black, with tumid rictus pale brownish (flesh color in life?); legs and feet dusky horn color (in dried skins).

*Adult male.* Length (skins), 99.8-125 (117.1); wing, 57.2-62.2 (59.4); tail, 37.8-44.5 (40.9); exposed culmen, 13-14.7 (13.7); tarsus, 17.5-18.8 (18.3); middle toe, 11.2-11.7 (11.4).<sup>1</sup>

*Adult female.*—Length (skins), 104.9-107.7 (106.4); wing, 56.1-57.4 (56.9); tail, 37.6-40.1 (38.9); exposed culmen, 12.7-13.2 (13); tarsus, 17.3-18 (17.8); middle toe, 11.4-11.7.<sup>2</sup>

Islands of Martinique and Santa Lucia, Lesser Antilles.

[*Certhia flaveola*] *β*. LINNÆUS, Syst. Nat., ed. 12, i, 1766, 187, part (citation of *Certhia martinicana* sive *saccharivora* Brisson, Orn., iii, 611, pl. 34, fig. 5).—GMELIN, Syst. Nat., i, 1788, 479.

*Nectarinia flaveola*, var. SWAINSON, Zool. Illustr., iii, 1822-23, pl. 142 (excl. syn.).

*Certhiola martinicana* REICHENBACH, Handb. d. spec. Orn., i, 1853, 252, pl. 561, fig. 3824 (ex Brisson).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1864, 271 (monogr.).—CABANIS, Journ. für Orn., 1865, 412.—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., 1869, 624 (monogr.).—FINSCH, Verh. k. k. zool.-bot. Gesellsch. Wien, 1871, 788 (monogr.).—SCLATER, Proc. Zool. Soc. Lond., 1871, 269 (Santa Lucia); 1889, 395 (Santa Lucia); Cat. Birds Brit. Mus., xi, 1886, 46 (Martinique; Santa Lucia).—SEMPER, Proc. Zool. Soc. Lond., 1872, 649 (Santa Lucia).—LAWRENCE, Proc. U. S. Nat. Mus., i, 1878, 354 (Martinique; habita).—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 166 (Santa Lucia).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 30 (synonymy).—CORY, Auk, iii, 1886, 52; iv, 1887, 95 (Martinique); Birds W. I., 1889, 66.

[*Certhiola*] *martinicana* SCLATER and SALVIN, Noin. Av. Neotr., 1873, 17.—BAIRD, Am. Nat., vii, 1873, 612; in Hist. N. Am. Birds, i, 1874, 428.—CORY, List Birds West Indies, 1885, 9.

[*Certhiola*] *martinicana* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 28 (diagnosis).

*Cereba martinicana* RIDGWAY, Proc. U. S. Nat. Mus., xii, Feb. 5, 1890, 129 (Santa Lucia; crit.).—CORY, Auk, viii, 1891, 40; Cat. W. I. Birds, 1892, 17, 116

grayish (in dried skins); length (skin), 127.5; wing, 64; tail, 42.7; exposed culmen, 16; tarsus, 19.6; middle toe, 12.7.<sup>1</sup>

*Adult female*.—Similar to the male, but smaller and more slaty blackish, with under parts more strongly glossed with olive; length (skin), 106.9; wing, 56.4; tail, 33.5; exposed culmen, 14.5; tarsus, 18.8; middle toe, 10.9.<sup>1</sup>

Island of St. Vincent, Lesser Antilles.

(?) *Dicaeum aterrimum* LESSON, *Traité d'Orn.*, i, 1831, 303 (locality unknown).—PUCHERAN, *Rev. Zool.*, 1846, 134 ("St. Thomas;" crit.).—HARTLAUB, *Isis*, 1847, 611; *Journ. für Orn.*, 1855, 418.—REICHENBACH, *Handb.*, ii, 1853, 243 (see FINSCH, *Verh. k. k. zool.-bot. Gesellsch. Wien*, 1871, 762).

*Certhiola atrata* LAWRENCE, *Ann. N. Y. Acad. Sci.*, i, no. 5, June, 1878, 150 (St. Vincent, Lesser Antilles; coll. U. S. Nat. Mus.); *Proc. U. S. Nat. Mus.*, i, 1878, 190 (St. Vincent; habits).—LISTER, *Ibis*, 1880, 40 (St. Vincent).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1883, 251, in text.—RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 30, part (synonymy).—CORY, *Auk*, iii, 1886, 53, part (do.); *Birds W. I.*, 1889, 67, part (do.).—SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 47, part (St. Vincent).

*C[erthiola] atrata* RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 28, part (diagnosis).

*Cereba atrata* CORY, *Auk*, viii, Jan., 1891, 40; *Cat. W. I. Birds*, 1892, 17, 116, 134 (St. Vincent).

### COEREBE WELLSI Cory.

#### WELLS' BANANAQUIT.

Similar to *C. atrata*, but smaller, and adult male not so deep black.

*Adult male*.—Length (skins), 104.6–112.8 (108.7); wing, 58.9–60.5 (59.7); tail, 36.1–36.6 (36.3); exposed culmen, 14–14.5 (14.2); tarsus, 18.8; middle toe, 11.9.<sup>2</sup>

*Adult female*.—Length (before skinning), 114.3; wing, 53.3; tail, 33.5; exposed culmen, 14; tarsus, 18; middle toe, 11.9.<sup>1</sup>

Island of Grenada, Lesser Antilles.

*Certhiola atrata* (not of Lawrence, 1878) LAWRENCE, *Proc. U. S. Nat. Mus.*, i, 1879, 269 (Grenada).—RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 30, part (Grenada).—CORY, *List Birds W. I.*, 1885, 9, part (Grenada); *Auk*, iii, 1886, 53, part (do.); *Birds W. I.*, 1889, 67, part (do.).—SCLATER, *Cat. Birds Brit. Mus.*, xi, 1886, 47, part (Grenada).—WELLS, *Proc. U. S. Nat. Mus.*, ix, 1886, 612 (Grenada; habits; desc. nest and eggs).

*C[erthiola] atrata* RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 28, part.

*Certhiola wellsi* CORY, *Auk*, vi, July, 1889, 219 (Grenada, Lesser Antilles; coll. C. B. Cory).

*Cereba wellsi* CORY, *Auk*, viii, Jan., 1891, 40; *Cat. W. I. Birds*, 1892, 17, 116, 134.

### Genus GLOSSIPTILA Sclater.

*Neornis* (not of Hodgson, 1844) HARTLAUB, *Nachtr. z. Verz. Mus. Brem.*, 1846, 8. (Type, *N. caerulea* Hartlaub, = *Tanagra ruficollis* Gmelin.)

*Glossiptila* SCLATER, *Proc. Zool. Soc. Lond.*, 1856, 269. (Type, *Tanagra ruficollis* Gmelin.)

*Euneornis* FITZINGER, *Sitz. ver. Wien Ak. Mett. Nat.*, xxi, Abth. 2, 1856, 316. (Type, *Tanagra ruficollis* Gmelin.)

<sup>1</sup> One specimen.

<sup>2</sup> Two specimens.

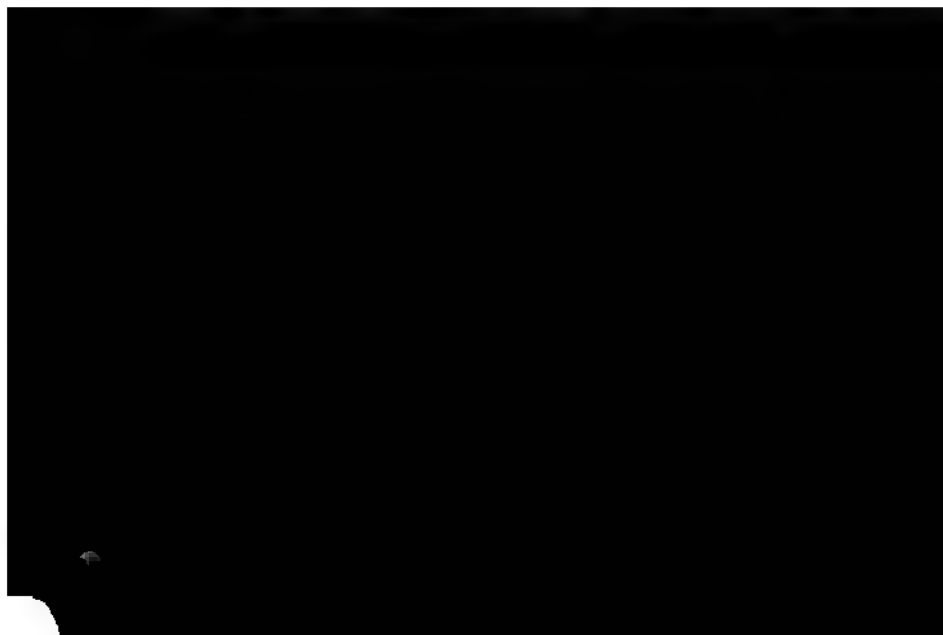
Rather stoutly built *Cœrebidæ*, with elongate-conical, slightly decurved bill, rather long tarsus (much longer than commissure, about one-fourth as long as wing) and plain coloration, the latter with neither bright blue, green, yellow, nor black (except on lores, etc.).

Bill much shorter than head, elongate-conoid, with upper outline distinctly convex, but lower outline nearly straight; culmen straight and rather elevated basally, but decidedly and regularly decurved from in front of nostrils; commissure slightly concave, though nearly straight in middle portion; tip of maxilla acute; gonys straight, slightly ascending terminally, its base forming a slight angle; depth of bill at base equal to about half length of exposed culmen, the basal width decidedly less; nostril mostly exposed, obliquely longitudinal (posterior end higher than anterior) in median portion of nasal fossæ, with rather broad membrane both above and below. Rictal bristles minute, very weak. Wing rather long, rather pointed (eighth, seventh, and sixth primaries longest, ninth about equal to fifth); wing-tip about equal to commissure, decidedly shorter than tarsus. Tail much shorter than wing (decidedly shorter than distance from bend of wing to tip of secondaries), even or very slightly emarginated. Tarsus much longer than commissure, about one-fourth as long as wing, its *scutella* rather distinct; middle toe with claw slightly shorter than tarsus; basal phalanx of middle toe with at least half its length free from inner toe.

*Coloration*.—Adult male uniform dull grayish blue, with rufous throat-patch; adult females and young olive-brownish above (the wings and tail more decidedly brown), under parts paler.

*Range*.—Island of Jamaica, Greater Antilles. (Monotypic.)

GLOSSIPTILA RUFICOLLIS (Gmelin).





*Young male*.—Similar to adult female, but texture of plumage different (much looser); color of head more olive, and sides and flanks more brownish.

Island of Jamaica, Greater Antilles.

(?) [*Motacilla*] *campestris* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 329 (based on *American Hedge Sparrow* Edwards, Nat. Hist., iii, pl. 122, fig. 2).

*Glossoptila campestris* LUCAS, Proc. U. S. Nat. Mus., xvii, Nov. 15, 1894, 301, in text.

[*Tanagra*] *ruficollis* GMELIN, Syst. Nat., i, pt. ii, 1788, 894 (based on *Rufous-throated Tanager* Latham, Gen. Synop. Birds, ii, pt. i, 241).

*Tanagrella ruficollis* GOSSE, Birds Jamaica, 1847, 236; Illustr. Birds Jam., 1849, pl. 58.

[*Tanagrella*] *ruficollis* GRAY, Gen. Birds, App., 1849, 17.—BONAPARTE, Consp. Av., i, 1850, 236.

[*Pyrrhulagra*] *ruficollis* BONAPARTE, Consp. Av., i, 1850, 493, excl. syn.

*Glossiptila ruficollis* SCLATER, Proc. Zool. Soc. Lond., 1856, 269 (monogr.); 1861, 73; Cat. Am. Birds, 1862, 54; Cat. Birds. Brit. Mus., xi, 1886, 48.—ALBRECHT, Journ. für Orn., 1862, 196.—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 296.—BAIRD, Review Am. Birds, 1864, 163, fig. 1 (fig. of tongue).—CORY, Auk, iii, 1886, 54; Birds W. I., 1889, 68; Cat. W. I. Birds, 1892, 17, 117, 130.

[*Glossiptila*] *ruficollis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 17.—CORY, List Birds W. I., 1885, 9.

[*Glossiptila*] *ruficollis* NEWTON (A. and E.), Handb. Jamaica, 1881, 104.

[*Certhiola*] *ruficollis* GRAY, Hand-list, i, 1869, 120, no. 1510.

*Tachyphonus rufogularis* LAFRESNAYE, Rev. Zool., ix, Sept., 1846, 320.

*Neornis caerulea* HARTLAUB, Nachtr. z. Verz. Mus. Brem., 1846, 8 (*nomen nudum*).

## Family MNIOTILTIDÆ.

### THE WOOD WARBLERS.

Slender-billed or flat-billed “nine-primaried” acutiplantar *Oscines*, with neither the tertials nor hind claw elongated<sup>1</sup> nor the tongue deeply cleft nor laciniate at tip.<sup>2</sup>

Bill usually slender-conoidal, sometimes rather stout, rarely short-subulate; if slender-cuneate with acute tip, not strongly, if at all, decurved terminally, and tail not longer than distance from bend of wing to tips of secondaries;<sup>3</sup> if depressed, with triangular vertical profile, the rictal bristles strongly developed (reaching more than halfway to tip of bill), and tail rounded; if comparatively stout, decidedly compressed with culmen decidedly convex, the tip of maxilla not uncinat and without distinct subterminal tomial notch.<sup>4</sup> Tongue moderately slender, with tip but slightly bifid or fimbriate. Skull with interpalatine process well developed; trans-palatine process short, bluntly angular; palatines not produced backward over pterygoids.<sup>5</sup>

<sup>1</sup> To exclude Motacillidæ.

<sup>2</sup> To exclude Cœrebidæ.

<sup>3</sup> This last character to exclude species of *Conirostrum*, usually referred to the Cœrebidæ, but not improbably belonging to the Mniotiltidæ. (See under Cœrebidæ, on page 377.)

<sup>4</sup> To exclude the “nine-primaried” Vireonidæ.

<sup>5</sup> See Lucas, Proc. U. S. Nat. Mus., xvii, 1894, 299–310.

In addition to the forms which are usually referred to the Mniotiltidæ<sup>1</sup> it seems best to place here the following genera, withdrawn from other groups: *Certhidea* and *Ateleodacnis*<sup>2</sup> (probably also *Conirostrum*), from the Cœrebidæ; *Hemispingus*,<sup>3</sup> from Tanagridæ, and *Rhodinocichla*, from Mimidæ. This transfer seems to be necessary in order to render possible anything like a satisfactory diagnosis of the Mniotiltidæ, Cœrebidæ, and Tanagridæ, as separate groups. The only one of these regarding which there can be reasonable doubt is *Rhodinocichla*. This has hitherto been placed in either the Troglodytidæ or the Mimidæ; but since it is a "nine-primaryed" bird it can not belong to either of these groups; and among the nine-primaryed *Oscines* there is no other group than the present one where it would not be conspicuously out of place. With this single exception the group is quite as natural as any other *Oscine* family (excepting, of course, the Hirundinidæ), although *Certhidea* is also to a degree aberrant; and, so far as I am able to see, is in no need of "readjustment" so far as the forms which have usually been referred to it are concerned. Nevertheless, Dr. Sharpe, in forecasting a "readjustment of the family, which must inevitably take place some day," suggests that "*Setophaga* and its allies will probably be considered to be Flycatchers [Muscicapidæ] rather than Warblers, *Helminthophaga* and *Helminthotherus* will very probably prove to be Wrens [Troglodytidæ], *Icteria* to be an aberrant Vireonine form, while *Granatellus* will be placed with the Tanagers." It is true that some of the genera mentioned represent very diverse types (though less differentiated than the aberrant genera *Rhodinocichla* and *Certhidea*), but that they are unquestionably all true Mniotiltidæ is perfectly evident from a careful examination of all the genera, which shows that *Setophaga*, *Helminthophila*, and

typical forms, the former being, indeed, a very near relative, its close relationship being shown even in the coloration.

The Mniotiltidæ are essentially—most of them strictly—insectivorous birds, of active habits. Most of them are arboreal, nesting and feeding among the trees and rarely descending to the ground; some are terrestrial, living much upon or near the ground, where they walk in the graceful “mincing” manner of a Wagtail or Pipit, meanwhile tilting the body, as if upon a pivot, and oscillating the tail in the same characteristic manner. Most of them are expert “flycatchers,” the *Setophagæ* notably so. Others creep about the trunks and branches of trees as nimbly as a Nuthatch. The majority of them combine, in various degrees, these several habits.

As a rule the Mniotiltidæ are birds of beautiful plumage, though their attractiveness in this respect consists in the tasteful arrangement or “pattern” of the colors rather than their brilliancy. Yellow is the most common and characteristic hue, though this is usually relieved by markings or areas of black, gray, olive-green, or white, usually by two or more of these colors; red is not unfrequent, grayish blue less common, while pure blue, green, or purple are never present, and the plumage never glossy as it is in many Cœrebidæ and Tanagridæ.

While few Mniotiltidæ are songsters of the first class,<sup>1</sup> many of them have attractive songs; but perhaps the majority, at least among the North American species, are songsters of very ordinary or inferior merit. Some of them<sup>2</sup> possess two songs of utterly different character: a plain, monotonous repetition of sharp notes as the ordinary song, and a rich, exuberant warble, uttered on special occasions, sometimes entirely replacing the former during the evening hours.<sup>3</sup>

The group is peculiar to America, where it represents the Sylviidæ and Muscicapidæ of the Eastern Hemisphere. The latest authority on the family<sup>4</sup> recognizes 158 species and subspecies belonging to 21 genera; but if to these be added 32 species and 4 genera transferred from the Cœrebidæ, Tanagridæ, and Mimidæ, as before noted, and

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<sup>1</sup> This distinction can, perhaps, be claimed for only one genus. *Rhodinocichla schistacea* is said to be one of the sweetest songsters of western Mexico, its “voluptuous and melodious notes” being, according to the late Colonel Grayson, fully equal to those of any species of Thrush.

<sup>2</sup> *Seiurus aurocapillus* and *Protonotaria citrea*, for example.

<sup>3</sup> For further information concerning general characteristics of the Mniotiltidæ see Coues, *Birds of the Colorado Valley* (1878), 199–202, and Ridgway, *The Ornithology of Illinois*, i (1889), 113, 114.

<sup>4</sup> Catalogue | of the | Passeriformes, | or | Perching Birds, | in the | Collection | of the | British Museum. | — | Fringilliformes. Part I. | containing the families | Dicaeidae, Hirundinidae, Ampelidae, | Mniotiltidae, and Motacillidae. | By | R. Bowdler Sharpe. | London | Printed by order of the Trustees. | 1885. |

Pp. [i]–xiii, 1–682, pls. i–xii. (Mniotiltidæ on pp. 225–439, 638–653, pls. ix–xii. Constituting vol. x of the Catalogue of the Birds in the British Museum.)

allowing for forms subsequently described and additional genera which it seems desirable to recognize, 200 species and subspecies and 30 genera may be considered a fair estimate.

The Mniotiltidae contain a larger proportion of monotypic genera than most Oscine families, nearly one-half of the genera being represented by a single known species.<sup>1</sup>

## KEY TO THE GENERA OF MNIOTILTIDÆ.

- a. Outermost (ninth) primary, but little, if any, shorter than secondaries (usually much longer); eighth primary much longer than first (equal to or longer than third); nostril longitudinal, with distinct superior membranous operculum.
- b. Tarsus less than half as long as tail, very much less than twice as long as middle toe without claw. (*Mniotiltix*.)
- c. Hallux longer than inner toe with claw, about equal to frontal length of tarsus. (*Mniotilta*.).....*Mniotilta* (p. 431)
- cc. Hallux much shorter than inner toe with claw (about equal to inner toe without claw), much shorter than frontal length of tarsus.
- d. Rictal bristles inconspicuous, sometimes obsolete; if distinct, much less than half as long as exposed culmen, and bill not depressed, its basal depth equal to or greater than its basal width.
- e. Tail not longer than wing (usually much shorter); bill slender, its basal depth not more than half the distance from nostril to tip of maxilla.
- f. Bill narrowly cuneate, with tip very acute and not distinctly, if at all, decurved, and without distinct, if any, tomial notch. (*Helinaia*.)
- g. Rictal bristles obsolete.
- h. Larger (wing more than 63.5).
- i. Inner webs of rectrices without white; wings and tail plain olive or brown; no pronounced yellow; no subterminal notch to maxillary tomium; basal phalanx of middle toe united to outer toe for much less than its entire length, to inner toe for not more than half its length.
- j. Bill much compressed, with culmen straight and conspicuously

- ii. Tail relatively longer (difference between length of tail and length of wing decidedly less than one-fourth the length of the latter); throat orange and back black, or else back olive-green, a conspicuous white superciliary stripe, and a chestnut spot in center of yellow breast.....**Oreothlypis** (p. 475)
- gg. Rictal bristles distinct, or at least obvious.....**Compsothlypis** (p. 478)
- ff. Bill not narrowly wedge-shaped with very acute tip, but slender-conoidal or subulate, with tip of maxilla obviously decurved; if approximately narrowly wedge-shaped with very acute tip, the maxillary tomium with distinct subterminal notch, and rictal bristles obvious.
- g. Rictal bristles distinct; wing-tip longer than exposed culmen. (*Dendroica*.)
- h. Bill subulate, of nearly uniform depth for most of its length; tail deeply emarginate; a white spot at base of primaries together with two white wing-bands.....**Peucedramus** (p. 493)
- hh. Bill slender-conoidal, tapering gradually to the tip; tail but slightly, if at all, emarginate; no white spot at base of primaries, or else no white wing-bands.
- i. Tail more than two and a half times as long as tarsus; inner webs of rectrices partly yellow or white, or else wing with white bars or upper parts streaked ..... **Dendroica** (p. 496)
- j. Tail not more than two and a half times as long as tarsus (usually much less); inner webs of rectrices without yellow or white (or if partly white the under parts dark slaty with white on abdomen and lower throat).
- k. Outermost (ninth) primary shorter than fifth; wing-tip shorter than commissure; upper parts plain sooty blackish, under parts slate-color with white on lower throat and abdomen; inner webs of lateral rectrices with a white terminal spot.....**Catharopeza** (p. 619)
- kk. Outermost (ninth) primary longer than fifth; wing-tip equal to or longer than commissure; upper parts plain olive-green, olive, or olive-grayish, the head sometimes gray or gray and black; under parts of body yellow, or conspicuously streaked with dusky on a white or very pale yellow ground; inner webs of lateral rectrices without white terminal spot.
- l. Tail rounded; under parts yellow, without streaks, the throat and chest sometimes gray or gray and black.  
**Oporornis** (p. 621)
- ll. Tail even or slightly emarginate; under parts whitish or very pale yellow, conspicuously streaked with dusky.  
**Seiurus** (p. 634)
- gg. Rictal bristles obsolete; wing-tip shorter than exposed culmen. (*Geothlypis*.)
- h. Commissure equal to or longer than middle toe with claw.
- i. Maxilla strongly curved; ninth primary shorter than first; tail slightly double-rounded or nearly even, the rectrices narrow, firm, with broad and rounded tip; under parts partly yellow.  
**Teretistris** (p. 684)
- ii. Maxilla straight; ninth primary longer than first; tail much rounded, the rectrices broad and rather soft, with tips sub-acuminate; no yellow .....**Leucopoea** (p. 650)
- hh. Commissure shorter than middle toe with claw.

- i. Middle toe, without claw, decidedly shorter than commissure; basal phalanx of middle toe united for nearly its entire length to outer toe; under parts gray, becoming whitish medially; no black on head.....*Microligea* (p. 651)
- ii. Middle toe, without claw, equal to or longer than commissure; basal phalanx of middle toe united for much less than its entire length to outer toe; under parts yellow; forehead and sides of head (at least partly) black in adult males.  
*Geothlypis* (p. 653)
- cc. Tail longer than wing, or else (*Granatellus*, part) bill stout, with culmen arched; bill stout, its basal depth equal to more than half the distance from nostril to tip of maxilla, the culmen strongly convex. (*Icteria*.)
- f. Outermost (ninth) primary longer than third; basal phalanx of middle toe united for only half its length to outer toe; mandible not deeper than maxilla; under parts partly yellow, without any red; upper parts olive-greenish, without pure gray or bluish gray (except sometimes on crown).
- g. Smaller (wing not more than 63.5); tarsus much more than one-third as long as wing; tail much rounded or graduated, with rectrices acuminate or subacuminate at tips; maxillary tomium with distinct subterminal notch .....*Chamaethlypis* (p. 686)
- gg. Larger (wing more than 69.8); tarsus not more than one-third as long as wing; tail slightly rounded, with rectrices obtuse or rounded at tips; maxillary tomium without subterminal notch...*Icteria* (p. 691)
- ff. Outermost (ninth) primary shorter than third; basal phalanx of middle toe united for nearly its entire length to outer toe; mandible deeper than maxilla; under parts partly red, without any yellow; upper parts bluish gray or brownish.....*Granatellus* (p. 697)
- dd. Rectal bristles conspicuous, half as long as exposed culmen (usually much more); bill depressed, its basal width exceeding its basal depth, or else very short (exposed culmen not longer than middle toe without claw). (*Setophaga*.)
- e. Outermost (ninth) primary longer than fifth, the eighth equal to or longer than sixth.

- ee. Outermost (ninth) primary shorter than fifth, the eighth shorter than sixth.
- f. Bill larger, broader at base (wider than deep at nostrils), its width at nostrils equal to at least half the distance from nostril to tip of maxilla; if small and relatively narrow the plumage without any red.
- g. Bill much depressed, broadly wedge-shaped or triangular in vertical profile, its width at base nearly if not quite equal to distance from nostril to tip of maxilla, the exposed culmen much less than half as long as tarsus; rictal bristles greatly developed, nearly if not quite as long as bill; lateral rectrices mostly white, or if less than half white the under parts of body red or orange; pileum not striped, nor upper tail-coverts nor basal half of tail buffy or ochraceous.....**Myioborus** (p. 730)
- gg. Bill moderately or slightly depressed, more narrowly wedge-shaped in vertical profile, its width at base much less than distance from nostril to tip of maxilla or else exposed culmen more than half as long as tarsus; rictal bristles less developed, much shorter than bill; lateral rectrices without any white, or else with merely a white terminal spot; pileum 3-striped, or black with a central spot of yellow, or else upper tail-coverts and basal half of tail buffy or ochraceous.
- h. Larger (wing more than 72.4); lateral rectrices with a white terminal spot; pileum black with a central spot of yellow.  
**Euthlypis** (p. 735)
- hh. Smaller (wing not more than 72.4, usually much less); lateral rectrices without any white; pileum not black with a central yellow spot, but 3-striped, or else uniform dark olive-brown and the upper tail-coverts and basal half of tail buffy or ochraceous.....**Basileuterus** (p. 738)
- ff. Bill smaller, narrower at base (deeper than wide at nostrils), its width at nostrils less than half the distance from nostril to tip of maxilla; plumage mostly red .....**Ergaticus** (p. 758)
- bb. Tarsus more than half as long as tail, more than twice as long as middle toe without claw. (*Certhideinae*.) .....**Certhidea** (p. 761)
- aa. Outermost (ninth) primary conspicuously shorter than secondaries; eighth primary shorter than first; nostril circular, without distinct superior operculum. (*Rhodinocichlinae*.) .....**Rhodinocichla** (p. 769)

### Genus MNIOTILTA Vieillot.

*Mniotilta* VIEILLOT, Analyse, 1816, 45. (Type, *Motacilla varia* Linnæus.)

*Oxyglossus* SWAINSON, Zool. Journ., iii, 1827, 357. (Type, *O. maculatus* Swainson, = *Motacilla varia* Linnæus.)

Small scansorial Mniotiltidæ with the hallux (without claw) longer than inner toe with claw.

Bill shorter than head, very slender, the maxilla slightly decurved terminally and with distinct subterminal tomial notch. Rictal bristles minute, weak. Wing long, pointed (ninth, eighth, and seventh primaries longest and about equal); wing-tip equal to or longer than tarsus. Tail slightly shorter than distance from bend of wing to tips of secondaries, even or very slightly emarginate, the rectrices rather narrow. Tarsus about one-fourth as long as wing or slightly less, its scutella

rather indistinct; middle toe with claw about equal to tarsus; inner toe with claw falling much short of base of middle claw, the outer longer, reaching nearly to base of middle claw; hallux (without claw) decidedly longer than inner toe with claw, equal to outer toe and about half the claw; basal phalanx of middle toe united for nearly its whole length to outer toe, for more than half its length to inner toe.

*Coloration*.—Conspicuously streaked above with black and white, beneath white, streaked with black or dusky at least on sides and flanks; wings and tail black, the former with two white bands, the latter with inner webs of lateral rectrices extensively white terminally; primaries and rectrices edged with gray.

*Habitat*.—Terrestrial.

*Range*.—Eastern North America, south in winter to Greater Antilles and through Mexico and Central America to northern South America. (Monotypic.)

#### MNIOTILTA VARIA (Linnaeus).

##### BLACK AND WHITE WARBLER.

*Adult male*.—Pileum with a broad median stripe of white and two still broader lateral stripes of black, slightly glossed with blue; rest of upper parts (except remiges and rectrices) slightly glossy blue-black, the back and scapulars streaked with white, middle and greater wing-coverts broadly tipped with white (forming two conspicuous bands), and tertials broadly edged with white; secondaries and primaries grayish black, narrowly edged with gray; middle rectrices black medially, gray laterally, the gray broader and usually with serrated margin on inner web; other rectrices grayish black narrowly edged





*Immature male.*<sup>1</sup>—Similar to the adult male, as described, but throat entirely white.

*Adult female.*—Similar to the immature male, as described, but smaller and much duller in color, the white everywhere more or less tinged with buffy brownish, the lores wholly pale grayish or grayish white, the auricular region pale buffy grayish margined above by a narrow postocular streak of black; streaks of sides much less distinct, becoming grayish on sides of chest, and flanks strongly tinged with brownish buff; mandible light-colored, dusky at tip; length (skins), 109.2–118.1 (113.8); wing, 65–67.6 (66); tail, 45.5–48.5 (46.5); exposed culmen, 10.2–12.2 (11.4); tarsus, 16.3–17.5 (16.8).<sup>2</sup>

*Young.*—Similar in coloration to adult female, but stripes of pileum less sharply defined, the lateral ones duller black; back more strongly tinged with buffy brown; anterior under parts dull light grayish, indistinctly mottled with darker, the sides without streaks.

Eastern North America, north to upper Mackenzie Valley (Fort Simpson), Hudson Bay (Moose Fort), etc., breeding southward to Virginia, Tennessee, Louisiana (St. Tammany and Tangipahoa parishes), Texas (Medina River), etc. (probably to upper sections of other Gulf States); wintering from the Gulf States southward throughout the West Indies, Mexico (both coasts), and Central America to Colombia and Venezuela; accidental in California (Farallone Islands, May 28, 1887; Point Lobos, Monterey County, September 9, 1891; Pasadena, October, 1895), and in the Bermudas.

[*Motacilla*] *varia* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 333 (based on *The Small Black and White Creeper* Sloane, Nat. Hist. Jamaica, ii, 309, pl. 265, fig. 1; *Le Figuier varié de S. Domingue* Brisson, Orn., iii, 529, pl. 27, fig. 5).—GMELIN, Syst. Nat., i, 1788, 979.  
[*Sylvia*] *varia* LATHAM, Index Orn., ii, 1790, 539.  
*Sylvia varia* BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 81.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 384.

<sup>1</sup> Possibly also the adult male in winter.  
<sup>2</sup> Eight specimens.

Specimens for the Atlantic coast district have, as a rule, decidedly longer bills than those from the Mississippi Valley, but I am unable to discover any other differences. Average measurements are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.
MALES.				
Ten adult males from Atlantic coast .....	68.8	48.8	12.2	17.3
Eight adult males from Mississippi Valley .....	68.3	48.5	10.7	17
FEMALES.				
Five adult males from Atlantic coast.....	66	46.5	11.7	16.8
Three adult males from Mississippi Valley .....	66.5	46.5	10.7	17

- Certhia varia* Vieillot, Ois. Am. Sept., ii, 1807, 69. AUDUBON, Orn. Biog., i, 1831, 452, pl. 90.—WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 282 (Nova Scotia).
- Mniotilta varia* Vieillot, Nouv. Dict. d'Hist. Nat., xxi, 1818, 230.—BONAPARTE, Proc. Zool. Soc. Lond., 1837, 118 (Guatemala), Geog. and Comp. List, 1838, 11.—AUDUBON, Synopsis, 1839, 71; Birds Am., 2d ed., ii, 1841, 105, pl. 114.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 702.—GOSSE, Birds Jamaica, 1847, 134.—LEMBEYK, Aves de la Isla de Cuba, 1850, 68, pl. 10, fig. 1.—HURDIS, Jardine's Contr. Orn., 1850, 35 (Bermuda, Oct. 9).—WOODHOUSE, Sitgreaves' Rep. Zuni and Colorado R., 1853, 69 (common in Texas and Indian Territory).—SCLATER, Proc. Zool. Soc. Lond., 1855, 143 (Bogota, Colombia), 1856, 140 (Chiriqui, Veragua), 291 (Cordova, Vera Cruz), 1859, 363 (Jalapa, Vera Cruz), 373 (Juquila and Totontepec, Oaxaca), 1861, 70 (Jamaica), 1864, 172 (Valley of Mexico), Cat. Am. Birds, 1862, 25 (Bogota; Jamaica).—GRUNDLACH, Journ. fur Orn., 1855, 475 (Cuba), 1861, 326 (do.); Repert. Fisico-Nat. Cuba, i, 1865, 232; Anal. Soc. Esp. Hist. Nat., vii, 1878, 177 (Porto Rico).—BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia), vii, 1859, 110 (Bahamas).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 235; Cat. N. Am. Birds, 1859, no. 167, Review Am. Birds, 1865, 167. MARTENS, Journ. fur Orn., 1859, 213 (Bermudas).—BLAND, Ann. Rep. Smithsonian Inst. for 1858 (1859), 287 (Bermudas).—NEWTON (A. and E.), Ibis, 1859, 143 (St. Croix).—CABANIS, Journ. fur Orn., 1860, 328 (Costa Rica).—LAWRENCE, Ann. Lye N. Y., vii, 1861, 322 (Panama R. R.); viii, 1865, 175 (David, Chiriqui), viii, 1866, 263 (near New York City); ix, 1868, 93 (Barranca, Juiz, and San José, Costa Rica); Mem. Bost. Soc. N. H., ii, 1869, 369 (Maxatlan; Colima, Dec., Apr.); Proc. U. S. Nat. Mus., viii, 1885, 621 (Guadeloupe, West Indies).—ALBRECHT, Journ. fur Orn., 1861, 52 (Bahamas), 1862, 193 (Jamaica).—HAYDEN, Trans. Amer. Philos. Soc., xii, 1862, 159 (Dakota).—MARCH, Proc. Ac. Nat. Sci. Phila., xv, 1863, 293 (Jamaica).—DRESSER, Ibis, 1865, 476 (Medina R., Texas, breeding).—McILWRAITH, Proc. Essex Inst., v, 1866, 85 (Hamilton, Ontario).—SALVIN, Proc. Zool. Soc. Lond., 1867, 135 (Santa Fé, Veragua), 1870, 182 (Chiriqui; Cordillera del Chucu, and Calovevora, Veragua).—SUMNER, Mem. Bost. Soc. N. H., i, 1869, 546 (Vera Cruz in winter).—COUES, Check List, 1873, no. 57, 2d ed., 1882, no. 91; Birds N. W., 1874, 45, Birds Col. Val., 1878, 204, footnote.—FRANTZIS, Journ. fur Orn., 1869, 292 (San Juan and Candelaria Mts., Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Panama R. R.); 1870, 780 (Merida, Venezuela).—WYATT, Ibis, 1871, 322 (Herradura, Colombia).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 267 (e Florida, winter); Proc. Bost. Soc. N. H., xvii, 1874, 52 (Dakota); Bull. Am. Mus. N. H., xiii, 1900, 178 (Bonda, etc., Prov. Santa Marta, Colombia, Aug. 21 to Jan. 4).—SNOW, Birds Kansas, 1873, 4.—HERRICK, Bull. Essex Inst., v, 1873, 30 (Grand Menan, New Brunswick).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 180, pl. 10, fig. 6.—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Guichicovi, Chiapas, Sept.).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (San Carlos, Costa Rica, Feb.).—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 22 (deser. young); Proc. Bost. Soc. N. H., xxii, 1884, 369 (Anticosti I., July).—MINOR, Bull. Nutt. Orn. Club, v, 1880, 226 (Boulder, Colorado, June).—CORY, Birds Bahama I., 1880, 54; Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti in winter); Birds Haiti and San Dom., 1885, 23; Auk, iii, 1886, 26 (West Indies references), 501 (Grand Cayman); iv, 1887, 181 (St. Andrews I., Caribbean Sea), viii, 1891, 47 (St. Eustatius, West Indies), 48 (St. Croix); ix, 1892, 48 (Watlings I., Bahamas); Birds W. I., 1889, 40, Cat. W. I. Birds, 1892, 117 (Great Bahama, Abaco, Bimini, Berry Islands, Eleuthera, New Providence, Andros, Watlings I., Rum Cay, and

Green Cay, Bahamas; Cuba, Isle of Pines, Grand Cayman, Jamaica, Haiti, Mona, Porto Rico, and St. Croix, Greater Antilles; Anguilla and St. Eustatius, Lesser Antilles).—SALVIN and GODMAN, *Ibis*, 1880, 117 (Minca, Colombia, 2,000 ft. alt.); *Biol. Centr.-Am., Aves*, i, 1880, 110.—RIDGWAY, *Nom. N. Am. Birds*, 1881, no. 74; *Proc. U. S. Nat. Mus.*, viii, 1885, 563 (Cozumel I.); x, 1888, 575 (Swan I.), 578 (Ruatan I.); *Orn. Illinois*, i, 1889, 117.—BROWN (N. C.), *Bull. Nutt. Orn. Club*, vii, 1882, 36 (Boerne, s. w. Texas).—BICKNELL, *Auk*, i, 1884, 210 (song).—SHARPE, *Cat. Birds Brit. Mus.*, x, 1885, 251, 641.—TURNER, *Proc. U. S. Nat. Mus.*, viii, 1885, 236 (Moose Factory, Hudson Bay).—AMERICAN ORNITHOLOGISTS' UNION, *Check List*, 1886, no. 636.—FERRARI-PEREZ, *Proc. U. S. Nat. Mus.*, ix, 1886, (Puebla, Mexico).—LLOYD, *Auk*, iv, 1887, 295 (Tom Green and Concho counties, w. Texas, in migration).—COOKE, *Bird Migr. Miss. Val.*, 1888, 237 (Mississippi Valley localities and dates).—BRYANT (W. E.), *Bull. Cal. Ac. Sci.*, 2d ser., i, 1888, 48 (Farallone Islands, California, 1 spec., May 28, 1887).—SCOTT, *Auk*, vii, 1890, 16 (Tarpon Springs, Florida, last of Mar. to early in May; Punta Rasa and Key West, July 13 to May 2).—CHERRIE, *Auk*, vii, 1890, 335 (San José, Costa Rica, Aug., Sept., Nov., and Feb.).—THOMPSON, *Proc. U. S. Nat. Mus.*, xiii, 1890, 616 (Manitoba, breeding).—NUTTING, *Bull. Lab. N. H. State Univ. Iowa*, ii, 1893, 277 (Grand Rapids, Saskatchewan).—NEHRLING, *Our Native Birds*, etc., i, 1893, 168, pl. 11, fig. 3.—CHERRIE, *Contr. Orn. San Dom.*, 1896, 11 (Jan. to Apr.).—GAYLORD, *Auk*, xiii, 1896, 260 (Pasadena, California, 1 spec., Oct. 8, 1895).—BANGS, *Proc. Biol. Soc. Wash.*, xii, 1898, 143 (Santa Marta, Colombia).—GRINNELL, *Pub. ii, Pasadena Ac. Sci.*, 1898, 44 (Arroyo Seco, Los Angeles Co., California, 1 spec., Oct. 2, 1895).—BEYER, *Proc. Louis. Soc. Nat. for 1897-99 (1900)*, 111 (Louisiana, breeding in St. Tammany and Tangipahoa parishes).—EMERSON, *Condor*, iii, 1901, 145 (Point Lobos, Monterey Co., California, 1 spec., Sept. 9, 1901).

[*Mniotilta*] *varia* BONAPARTE, *Consp. Av.*, i, 1850, 311.—COUES, *Key N. Am. Birds*, 1872, 92.—SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 8.—CORY, *List Birds W. I.*, 1885, 9.

*M[niotilta] varia* CABANIS, *Mus. Hein.*, i, 1850, 20 (Mexico).—NEWTON (A. and E.), *Handb. Jamaica*, 1881, 105.—COUES, *Key N. Am. Birds*, 2d ed., 1884, 290.—RIDGWAY, *Man. N. Am. Birds*, 1887, 484.

*Mniotilta* [err. typ.] *varia* LESSON, *Traité d'Orn.*, 1831, 318.—VIEILLLOT, *Gal. Ois.*, i, 1834, 276, pl. 169.—SCLATER, *Proc. Zool. Soc. Lond.*, 1858, 298 (La Parada, Oaxaca).

*Minotilta* (err. typ.) *varia* SALVIN and SCLATER, *Ibis*, 1859, 10 (Belize, British Honduras, and highlands of Guatemala, in winter).

*Miniotilta vara* (err. typ.) GREGG, *Proc. Elmira Acad.*, 1870.

[*Mniotilta varia*] *a. varia* RIDGWAY, *Orn. Illinois*, i, 1889, 117.

*Sylvicola varia* JARDINE, ed. *Wilson's Am. Orn.*, i, 1832, 314, pl. 19, fig. 3.—RICHARDSON, *Rep. Brit. Assoc. for 1836 (1837)*, 172.—BRYANT, *Proc. Bost. Soc. N. H.*, xi, 1866, 91 (Santo Domingo).

*Nectarinia varia* HAHN and KÜSTER, *Orn. Atl.*, Lief. viii, 1834, pl. 4.

*Certhia maculata* WILSON, *Am. Orn.*, iii, 1811, 22, pl. 19, fig. 3.—BONAPARTE, *Journ. Ac. Nat. Sci. Phila.*, iv, 1824, 27.—DENNY, *Proc. Zool. Soc. Lond.*, 1847, 39 (Jamaica; Cuba).

*Oxyglossus maculatus* SWAINSON, *Zool. Journ.*, iii, 1827, 357.

*Mniotilta borealis* NUTTALL, *Man. Orn. U. S. and Can.*, 2d ed., i, 1840, 705 (Spot Pond, near Medford, Massachusetts, May 8).

*Mniotilta varia borealis* RIDGWAY, *Proc. U. S. Nat. Mus.*, iii, Aug. 24, 1880, 171, 215; *Nom. N. Am. Birds*, 1881, no. 74a; *Man. N. Am. Birds*, 1887, 484, footnote.—COUES, *Check List*, 2d ed., 1882, no. 92.

- M[niotilta] r[aria] borealis* COOPER, Key N. Am. Birds, 2d ed., 1884, 290.  
 [*Mniotilta varia*] b. *borealis* RIDGWAY, Orn. Illinois, i, 1889, 117.  
 [*Mniotilta varia*.] Var. *longirostris* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, p. xxxi, no. 167, in text (Cape Florida; see p. 236, in text).  
 Var. *Mniotilta longirostris* BAIRD, Cat. N. Am. Birds, 1859, no. 167a.

## Genus HELINAIA Audubon.

- Helinaia*<sup>1</sup> AUDUBON, Synopsis Birds Am., 1839, 67. (Type, by elimination, *Sylvia meamsonii* Audubon.)  
*Helinaea* (emendation) AGASSIZ, Nom. Zool., Ind. Univ., 1846, 175, 176.  
*Helonaa* (emendation) NEWTON, Proc. Zool. Soc. Lond., 1879, 552.

Rather small, plainly colored Mniotilidæ, with the bill nearly as long as head, straight, compressed, and with the culmen distinctly elevated and ridged between nostrils; coloration plain brownish above, whitish or pale dull yellowish beneath.

Bill nearly as long as head, narrowly wedge-shaped, compressed; culmen straight from base to tip, narrowed and distinctly ridged and elevated between nostrils; maxillary tomium without subterminal notch; gonys very faintly convex basally, shorter than distance from nostril to tip of maxilla. Nasal fossæ large and broad, chiefly occupied by the broad operculum overhanging the longitudinally oval or subcuneate nostril. Rictal bristles obsolete. Wing moderate, rather pointed (ninth, eighth, and seventh primaries longest and nearly equal, but ninth slightly shorter than seventh); wing-tip slightly shorter than tarsus. Tail shorter than distance from bend of wing to tips of secondaries, slightly emarginate or double-rounded, the rectrices very broad, with tips subacuminate. Tarsus decidedly longer than commissure, more than one-fourth as long as wing, its scutella rather distinct; middle toe with claw about equal to tarsus; basal phalanx of

upper tail-coverts and wing-coverts plain olive; tertials warmer brown (inclining to mummy or prouts brown); secondaries and primaries dusky, edged with light brown or olive; tail plain olive-brown; a narrow superciliary stripe of light yellowish buff or buffy whitish; a triangular spot of dusky in front of eye; a postocular streak of brownish; sides of head otherwise pale buffy brownish; under parts pale dull yellowish or yellowish white, shaded with olive or olive-grayish laterally; bill light brownish, the mandible usually paler; iris brown; legs and feet pale flesh color in life, pale brownish in dried skins.

*Young*.—Head, neck, back, rump, upper tail-coverts, chest, sides, and flanks plain brown (varying from broccoli to bister); rest of under parts whitish or dull pale yellowish, more or less clouded with brown; middle and greater wing-coverts indistinctly tipped with cinnamon-brown; otherwise like adults, but no trace of lighter superciliary nor darker postocular stripes.

*Adult male*.—Length (skins), 124.5–129.5 (126.5);<sup>1</sup> wing, 67.3–72.1 (69.6); tail, 46.5–49.8 (48.3); exposed culmen, 14.7–16 (15.5); tarsus, 17.5–18.3 (18).<sup>2</sup>

*Adult female*.—Length (skins), 125.7–129.5 (128.3); wing, 69.3–70.6 (70.1); tail, 47.7–50.5 (49.5); exposed culmen, 15–15.7 (15.5); tarsus, 18.<sup>3</sup>

Austroriparian district (humid division of Lower Austral life-zone) of eastern United States, breeding from Georgia and the Gulf coast (northwestern Florida to Louisiana) north to southeastern Virginia (Dismal Swamp), western Kentucky (Fulton County), southwestern Indiana (Knox County), and southeastern Missouri (Dunklin County); west to eastern Texas (Navarro County); south in winter to Bahamas (Bimini islands), Cuba, and Jamaica.

*Sylvia swainsonii* AUDUBON, Orn. Biog., ii, 1834, 563, pl. 198 (near Charleston, South Carolina; type in coll. U. S. Nat. Mus.).

*Sylvicola swainsonii* RICHARDSON, Rep. Brit. Assoc. Adv. Sci. for 1836 (1837), 171.

*Helinaia swainsonii* AUDUBON, Synopsis, 1839, 66; Birds Am., oct. ed., ii, 1841, 83, pl. 104.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 638.—LOOMIS, Auk, iv, 1887, 347 (Chester, South Carolina); viii, 1891, 169 (same occurrence).—SCOTT, Auk, v, 1888, 187 (Key West, Florida, migrant); vii, 1890, 16 (Punta Rassa and Key West, migr.), 313 (Garden Key, Dry Tortugas, Mar. 25 and Apr. 6); ix, 1892, 213 (Caloosahatchie R., Florida, migratory); x, 1893, 340 (Jamaica).—COOKE, Bird Migr. Miss. Val., 1888, 239.—PINDAR, Auk, vi, 1889, 315 (Fulton Co., Kentucky).—BREWSTER and CHAPMAN, Auk, viii, 1891, 137, 138 (Suwanee R., Florida, Mar. 22).—WAYNE, Auk, x, 1893, 338 (lower Suwanee R., breeding); xii, 1895, 365, 367 (Wacissa R., Florida, breeding).—NEHRLING, Our Native Birds, etc., i, 1893, 175.—RHOADS, Proc. Ac. Nat. Sci. Phila., 1895, 492 (Raleigh, Tennessee, breeding).—BEYER, Proc. Louis. Soc. Nat. for 1897–99 (1900), 111 (Louisiana, summer resid.).—DANIEL, Auk, xix, 1902, 18 (Dismal Swamp, Virginia, breeding; rare).

<sup>1</sup> Length before skinning, 139.7–165.1; extent of wing, 218.4–228.6 (Brewster).

<sup>2</sup> Five specimens.

<sup>3</sup> Three specimens.

- Helminthosoma swainsoni* RIDGWAY, Bull. Nutt. Orn. Club, iii, 1878, 163 (Knox Co., Indiana); Orn. Illinois, i, 1880, 121. NEWTON, Proc. Zool. Soc. Lond., 1879, 552 (Jamaica). BREWSTER, Auk, ii, 1885, 76 [65-80] (monograph), 346-348 (descr. nests and eggs).—MERRIAM, Auk, ii, 1885, 377 (Jamaican records).—LAWRENCE, Auk, iv, 1887, 37, 263 (Lake Pontchartrain, Louisiana).—BECKHAM, Auk, iv, 1887, 305 (Bayou Sara, Louisiana; descr. habits and song).—GALBRAITH, Auk, v, 1888, 323 (Lake Pontchartrain).—CORY, Auk, viii, 1891, 296 (Bimini islands, Bahamas); Cat. W. I. Birds, 1892, 117 (Cuba; Jamaica).—FISHER, Auk, xii, 1895, 307 (Dismal Swamp, Virginia).
- Helonja swainsoni* RIDGWAY, Proc. U. S. Nat. Mus., iii, Mar. 27, 1880, 2; Aug. 24, 1880, 171, Nom. N. Am. Birds, 1881, no. 76, Bull. Nutt. Orn. Club, vi, 1881, 54 (Navarro Co., Texas).—OGILBY, Sci. Proc. Roy. Dublin Soc., iii, 1882, (18) (Rice, Navarro Co., Texas, Aug. 24)—MERRIAM, Auk, ii, 1885, 104 (Sombrero Key, Florida, Sept. 14-21).
- Vermivora swainsoni* BONAPARTE, Geog. and Comp. List, 1838, 21.
- M[icropodius] swainsoni* GRAY, Gen. Birds, i, 1848, 196.
- [*Micropodius*] *swainsoni* GRAY, Hand-list, i, 1869, 239, no. 3464.
- H[elminthosoma] swainsoni* CARANIS, Mus. Hein., i, 1850, 20, footnote.
- [*Helminthosoma*] *swainsoni* BONAPARTE, Consp. Av., i, 1850, 314.
- Helminthosoma swainsoni* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 252; Cat. N. Am. Birds, 1859, no. 179.
- Helminthosoma swainsoni* BAIRD, Review Am. Birds, 1865, 180. GRUNDLACH, Repert. Fauna Nat. Cuba, i, 1865, 232, Journ. für Orn., 1872, 412 (Cuba).—COCES, Proc. Bost. Soc. N. H., xii, 1868, 109 (South Carolina), Check List, 1873, no. 61.—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269 (St. Augustine, Florida, Apr.).—MAYNARD, Birds Florida, 1873, 47.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 190, pl. 10, fig. 9, iii, 1874, 504 (Florida).—BROWN, Bull. Nutt. Orn. Club, iii, 1878, 172 (Coosa and Tallapoosa rivers, Alabama; habits and song).—CORY, Auk, iii, 1886, 27; Birds W. I., 1880, 41 (Cuba, Jamaica).
- [*Helminthosoma*] *swainsoni* CORY, List Birds W. I., 1885, 7.
- [*Helminthosoma*] *swainsoni* COOK, Key N. Am. Birds, 1872, 93.
- Helminthosoma swainsoni* COOK, Birds Col. Val., 1878, 212, footnote; Check List, 2d ed., 1882, no. 97.
- H[elminthosoma] swainsoni* COOK, Key N. Am. Birds, 2d ed., 1884, 292.
- H[elminthosoma] swainsoni* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, sig. 14, Aug., 1880, 112.—NEWTON (A. and E.), Handb. Jamaica, 1881, 105.
- Helminthosoma swainsoni* SPARKE, Cat. Birds Brit. Mus., x, 1885, 232 (Jamaica).
- Helminthophaga swainsoni* ALLEN, Ann. Nat., iii, 1869, 513.

#### Genus HELMITHEROS Rafinesque.

- Helmitheros* RAFINESQUE, Journ. de Phys., lxxxviii, 1819, 418. (Type, *H. migratorius* Rafinesque, — *Motacilla vermivora* Gmelin.)
- Helmitheros* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 250.
- Helmintherus* (emendation) SALVIN, Proc. Zool. Soc. Lond., 1867, 135.
- Helminthera* (emendation) SUNDEVALL, Tent. Meth. Av. Disp., 1872, 28.
- Helminthotherus* (emendation) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, sig. 14, Aug., 1880, 112.

Similar to *Helinaia*, but with the bill shorter, less compressed, with culmen slightly curved and not conspicuously ridged, nor elevated between nostrils; ninth primary longer than seventh (instead of shorter); head conspicuously striped (four black inclosing three buff stripes).



Bill decidedly shorter than head, wedge-shaped, but with culmen obviously (though slightly) curved, moderately compressed, with culmen not sharply ridged nor conspicuously elevated between nostrils; maxillary tomium without subterminal notch; tip of both maxilla and mandible acute; gonys slightly shorter than distance from nostril to tip of maxilla. Nasal fossæ broad but rather short, chiefly occupied by the broad operculum overhanging the longitudinally oval or subcuneate nostril. Rictal bristles obsolete. Wing rather long, pointed (ninth, eighth, and seventh primaries longest and nearly equal, the ninth longer than seventh, sometimes longest); wing-tip slightly longer than tarsus. Tail slightly shorter than distance from bend of wing to tip of secondaries, even or very slightly rounded, the rectrices moderately broad. Tarsus decidedly longer than commissure (about one-fourth as long as wing or slightly more), its scutella rather indistinct; middle toe with claw slightly shorter than tarsus; basal phalanx of middle toe united for more than half its length to outer toe, for about basal half to inner toe.

*Coloration*.—Head and under parts buffy, the former with four black stripes; rest of upper parts plain olive-greenish; sexes alike.

*Nidification*.—Terrestrial.

*Range*.—Eastern United States (humid division of Upper and Lower Austral zones); south in winter to Cuba, Jamaica, and Central America as far as Panama. (Monotypic.)

#### HELMITHEROS VERMIVORUS (Gmelin).

##### WORM-EATING WARBLER.

*Adults (sexes alike)*.—Pileum with two broad lateral stripes of black and a median one of olive-buff; rest of upper parts plain grayish olive-green; a broad superciliary stripe of pale buff or cream-buff, margined beneath by a rather broad postocular streak of black and a more or less distinct triangular spot of the same, or dusky grayish, in front of eye; sides of head below this black line, with entire under parts pale dull buffy, deepest on chest, paler on throat and abdomen (the latter sometimes nearly white), tinged with grayish olive on flanks; under tail-coverts pale olive-grayish, edged and broadly tipped with pale yellowish buff; maxilla brown, usually darker on culmen; mandible paler (pale flesh color in life?); iris brown; legs and feet pale yellowish brown in dried skins (more fleshy in life).

*Adults in winter* are more richly colored, the sides of head, chest, etc., deeper buff, the abdomen buffy yellowish, and the olive-green of upper parts less grayish.

*Young*.—Head, neck, and under parts buff, the pileum with two broad, but not strongly contrasted, lateral stripes of wood brown or isabella color; a postocular streak of the same color; back, scapulars, rump, and upper tail-coverts wood brown or isabella color; wing-

coverts light buffy olive, the middle and greater broadly but not sharply tipped with cinnamon-buff; remiges and rectrices grayish olive-green, as in adults.

*Adult male*.—Length (skins), 118.1–127 (121.1); wing, 66.3–72.9 (69.3); tail, 47.7–51 (49.3); exposed culmen, 12.9–14.5 (13.7); tarsus, 17.3–18.3 (18).<sup>1</sup>

*Adult female*.—Length (skins), 110.5–127 (117.3); wing, 64.8–67.1 (65.8); tail, 44.7–47.7 (46.5); exposed culmen, 12.7–13.7 (13.2); tarsus, 17.8–19.3 (18.3).<sup>2</sup>

Eastern United States, breeding northward to southern Connecticut (Saybrook; Gales Ferry; near New Haven), southeastern New York (lower Hudson Valley), Pennsylvania (Beaver, Butler, Armstrong, and Delaware counties), southern Wisconsin (vicinity of Racine), etc.; occasional in Massachusetts (Cambridge; Easthampton); in winter south to Bahamas (New Providence; Great Inagua; Cay Lobos), Cuba, Jamaica, Cayman Brac (near Cuba), and through eastern Mexico and Central America to Veragua (Santa Fé).

[*Motacilla*] *vermivora* GMELIN, Syst. Nat., i, 1788, 951 (based on *The Worm-eater*, *Vermivora* Edwards, Gleanings Nat. Hist., ii, 200, pl. 305).

[*Sylvia*] *vermivora* LATHAM, Index Orn., ii, 1790, 544.

*Sylvia vermivora* WILSON, Am. Orn., iii, 1811, 74, pl. 24, fig. 4.—VIEILLAT, Nouv. Dict. d'Hist. Nat., 2d ed., xi, 1817, 278; Enc. Méth., ii, 1823, 480.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 409.—AUDUBON, Orn. Biog., i, 1831, 177, v, 1839, 460.

*Ducula vermivora* AUDUBON, Birds Am., fol. ed., pl. 34.

*Sylviicola vermivora* RICHARDSON, Rep. Brit. Soc. Adv. Sci. for 1836 (1837), 171.

*Tulinia vermivora* AUDUBON, Synopsis, 1839, 66; Birds Am., oct. ed., ii, 1841, 86, pl. 105.—LEMBEVE, Aves de la Isla de Cuba, 1850, 35, pl. 6, fig. 4.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).

*M. vermivora* GAY, Geol. Poiss., 818, 190.



- 48.—MAYNARD, Birds Florida, 1873, 45 (wintering).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 187, pl. 10, fig. 10; iii, 1874, 504 (Lawrence, Kansas, May).—RIDGWAY, Field and Forest, i, 1875, 10 (nesting habits).—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (Saybrook, Connecticut, breeding).—PURDIE, Bull. Nutt. Orn. Club, ii, 1877, 21 (Suffield, Connecticut, 1 spec.).—MERRIAM, Trans. Conn. Acad., iv, 1877, 12 (Connecticut).—BREWSTER, Ann. Lyc. N. Y., xi, 1875, 134 (Ritchie Co., West Virginia, breeding; habits; song); Bull. Nutt. Orn. Club, iii, 1878, 23 (descr. young).—BICKNELL, Bull. Nutt. Orn. Club, iii, 1878, 129 (Riverdale, New York, breeding).—CORY, Birds Bahama Is., 1880, 56; Auk, iii, 1886, 27; vi, 1889, 31 (Cayman Brac.); ix, 1892, 49 (Inagua, Bahamas); Birds W. I., 1889, 41; Cat. W. I. Birds, 1892, 117 (New Providence and Great Inagua, Bahamas; Cuba; Jamaica).—WOOLSEY, Bull. Nutt. Orn. Club, v, 1880, 116 (near New Haven, Connecticut, breeding).—SPELMAN, Bull. Nutt. Orn. Club, vi, 1881, 246 (Cambridge and Easthampton, Massachusetts, accidental).—RIVES, Auk, ii, 1885, 103 (Albemarle Co., Virginia; descr. nest and eggs).—SAGE, Auk, ii, 1885, 305 (New Haven, Connecticut, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 639.—BUTLER, Bull. Brooklyn Soc. N. H., no. 2, 1886, 34 (Franklin Co., Indiana, very common summer resid.).—COOKE, Bird Migr. Miss. Val., 1888, 239.—SCOTT, Auk, vii, 1890, 16 (Punta Rassa, Florida, migrant; Tarpon Springs, Mar. 25 to late in Apr.; Key West, Apr. and Aug. 30 to Oct. 1).—GOSS, Birds Kansas, 1891, 539 (summer resid. in e. Kansas).—TODD, Auk, viii, 1891, 397 (Beaver, Butler, and Armstrong counties, Pennsylvania, breeding).—NEHRLING, Our Native Birds, etc., i, 1893, 182, pl. 11, fig. 5.—HOWE, Auk, xvii, 1900, 389 (Gales Ferry, Connecticut, June 24).—BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 111 (Louisiana, breeding).—DANIEL, Auk, xix, 1902, 18 (Dismal Swamp, Virginia, breeding.)
- [*Helmitherus*] *vermivorus* COUES, Key N. Am. Birds, 1872, 93.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.
- H[elmitherus]* *vermivorus* NELSON, Bull. Essex Inst., viii, 1876, 98 (Waukegan, n. e. Illinois, 1 spec.).—RIDGWAY, Man. N. Am. Birds, 1887, 485.
- Helmintherus vermivorus* SALVIN, Proc. Zool. Soc. Lond., 1867, 135 (Santa Fé, Veragua).—FRANTZIUS, Journ. für Orn., 1869, 293 (San José, Costa Rica).—COUES, Birds Col. Val., 1878, 211; Check List, 2d ed., 1882, no. 96.—WOOLSEY, Bull. Nutt. Orn. Club, v, 1880, 116 (near New Haven, Connecticut, breeding).—RHODES, Bull. Nutt. Orn. Club, vii, 1882, 55 (Delaware Co., Pennsylvania and Camden, New Jersey, breeding).
- H[elmintherus]* *vermivorus* COUES, Key N. Am. Birds, 2d ed., 1884, 291.
- [*Helmintherus*] *vermivorus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.
- Helminthotherus vermivorus* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, fig. 14, Aug., 1880, 112.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 77.—BICKNELL, Auk, i, 1884, 210 (song).—SAGE, Auk, ii, 1885, 305 (New Haven, Connecticut, breeding).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 230, 638.—BOYHOTE, Auk, xviii, 1901, 146 (Cay Lobos, Bahamas, Apr. 5).
- H[elminthotherus]* *vermivorus* NEWTON (A. and E.), Handb. Jamaica, 1881, 105.
- Helmitheros migratorius* RAFINESQUE, Journ. Phys., lxxxviii, 1813, 418 (see Hartlaub, Rev. Zool., viii, 1845, 343).
- Vermivora pennsylvanica* SWAINSON, Philos. Mag., 2d ser., i, 1827, 434.—JARDINE, ed. Wilson's Am. Orn., i, 1832, 363.—BONAPARTE, Geog. and Comp. List, 1838, 20.—GOSSE, Birds Jamaica, 1847, 150.—HOY, Proc. Ac. Nat. Sci. Phila., 1853, 212 (near Racine, Wisconsin; a few nest.); Ann. Rep. Smithsonian Inst. for 1864 (1865), 438 (Missouri).—ALBRECHT, Journ. für Orn., 1862, 194, 201 (Jamaica).—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 293 (Jamaica).
- [*Vermivora*] *fulvicapilla* SWAINSON, Classif. Birds, ii, 1837, 245 (based on Wilson, Am. Orn., pl. 24, fig. 4).

## Genus PROTONOTARIA Baird.

*Protonotaria* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 239. (Type, *Motacilla citrea* Boddaert.)

Medium sized Mniotiltidae with form essentially similar to that of *Helmitheros*, but wing-tip longer (decidedly exceeding tarsus) and feet weaker, and coloration very different (yellow, with olive-green back, gray wings and tail, and white under tail-coverts, the inner webs of rectrices mostly white).

Bill decidedly shorter than head, wedge-shaped but with culmen obviously curved, compressed (conspicuously so for terminal half), the maxillary tomium with subterminal notch present but indistinct or obsolete; culmen distinctly ridged but not elevated basally; gonys slightly shorter than distance from nostril to tip of maxilla. Nasal fossae broad but mostly covered by latero-frontal feathers, partly concealing both the longitudinally oval nostrils and their narrow superior operculum. Rictal bristles obsolete. Wing rather long, rather pointed (ninth, eighth, and seventh primaries longest, the ninth slightly shorter than seventh); wing tip long, much exceeding length of tarsus. Tail slightly shorter than distance from bend of wing to tips of secondaries, slightly rounded. Tarsus decidedly longer than commissure, its scutella indistinct (sometimes fused on outer side); middle toe with claw much shorter than tarsus; lateral toes with claws falling short of base of middle claw; basal phalanx of middle toe united for most of its length to outer toe, for more than half its length to inner toe.

*Coloration*.—Yellow, with under tail-coverts and greater part of inner webs of rectrices white, back and scapulars (also pileum and hindneck in females) olive-green, wing-edgings, rump, upper tail-coverts, and edges of rectrices gray.

*Nidification*.—In holes of stumps or trees.

*Range*. Humid division of Upper and Lower Austral life-zones, in swamps and wet bottom lands; in winter south through Mexico and Central America to northern South America and to Cuba. (Monotypic.)

## PROTONOTARIA CITREA (Boddaert).

## PROTHONOTARY WARBLER.

*Adult male in summer*. Head, neck, and under parts (except under tail-coverts) rich yellow (varying from lemon to cadmium, usually nearer the latter), the head sometimes tinged or flecked with cadmium orange; back and scapulars plain yellowish olive-green, this sometimes extending anteriorly over hindneck and occiput;<sup>1</sup> rump, upper tail-

<sup>1</sup>Frequently the entire hindneck and occiput are pure yellow, abruptly defined against the olive-green of the back, more often there is more or less of a patch of yellowish olive-green on the occiput, the hindneck being yellow.

coverts, wing-coverts, and tertials plain gray or slate-gray; secondaries, primaries, and rectrices black, edged with slate-gray, the inner webs of rectrices (except middle pair) white tipped with blackish; under tail-coverts white; under wing-coverts and axillars white, tinged with yellow; inner webs of remiges edged with white; bill black; iris brown; legs and feet dusky (in dried skins), the claws paler.

*Adult male in winter.*—Similar to the summer male, but maxilla brownish, darker terminally, and mandible mostly very pale brownish or brownish white.

*Adult female.*—Similar to the male, but smaller and much duller in color; olive-green of back extended anteriorly over hindneck and pileum; yellow of under parts less intense, more or less tinged with olive, and becoming much paler on abdomen and flanks, the latter strongly tinged with olive; bill dusky in summer, light-colored (as in winter male) in winter.

*Young.*—Pileum, hindneck, back, and scapulars dull olive-greenish; wing-coverts, tertials, rump, and upper tail-coverts slate-gray, tinged with olive, the middle and greater wing-coverts narrowly tipped with light olive-greenish; producing two very indistinct bands; secondaries, primaries, and rectrices as in adults; sides of head pale yellowish olive; chin, throat, and chest dull light grayish olive, darkest on chest; rest of under parts dull white, passing on sides and flanks into olive-grayish.

*Adult male.*—Length (skins), 118.1–130.8 (123.7); wing, 71.1–74.2 (72.9); tail, 46.2–49.8 (48); exposed culmen, 12.9–13.7 (13.2); tarsus, 18.3–19.8 (19).<sup>1</sup>

*Adult female.*—Length (skins), 116.8–125.5 (120.1); wing, 65.5–69.1 (67.3); tail, 42.9–48.5 (45); exposed culmen, 12.9–13.5 (13.2); tarsus, 18.5–19.6 (19.3).<sup>1</sup>

More southern portions of eastern United States, breeding from Gulf States (northern Florida to eastern Texas), north to Virginia (lower districts), southern Ohio, Indiana (nearly whole State), southern Michigan, northeastern Illinois (Cook County), Iowa (Muscatine), southeastern Minnesota, eastern Nebraska (Omaha; Nebraska City), etc.; occasional northward to Massachusetts (several records), southeastern New York (Yonkers), Ontario (Hamilton), and Wisconsin, casually to Maine (Calais) and New Brunswick; south in winter to Cuba and through eastern Mexico and Central America to Colombia, Venezuela, and Trinidad.

*Motacilla citrea* BODDAERT, Tabl. Pl. Enl., 1783, 44 (based on *Figuier à ventre et tête jaunes de la Louisiane* Daubenton, Pl. Enl., pl. 704, fig. 2).

*M[niotalia] citrea* GRAY, Gen. Birds, i, 1848, 196.

*[Mniotalia] citrea* GRAY, Hand-list, i, 1869, 239, no. 3454.

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<sup>1</sup> Five specimens.



- [*Protonotaria*] *citrea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.—CORY, List Birds W. I., 1885, 7 (Cuba).
- P[rotonotaria] citrea* NELSON, Bull. Essex Inst., viii, 1876, 98 (n. e. Illinois, rare summer visit.).—COUES, Key N. Am. Birds, 2d ed., 1884, 291.—RIDGWAY, Man. N. Am. Birds, 1887, 484.
- [*Protonotaria*] *citræa* COUES, Key, 1872, 93.
- Protonotaria citræa* COUES, Check List, 1873, no. 59; Birds N. W., 1874, 47.
- P[rotonotaria] citræa* NELSON, Bull. Nutt. Orn. Club, i, 1876, 42 (near Chicago, 2 specs., summer).
- Helminthophaga citrea* CABANIS, Journ. für Orn., ix, Mar., 1861, 85 (Costa Rica).
- [*Motacilla*] *protonotarius* GMELIN, Syst. Nat., i, 1788, 972 (based on *Figuier Protonotaire* Buffon, Hist. Nat. Ois., v, 316; *Prothonotary Warbler* Latham, Gen. Synop., ii, pt. 2, 494).
- [*Sylvia*] *protonotarius* LATHAM, Index Orn., ii, 1790, 542.
- Sylvia protonotarius* VIEILLOT, Ois. Am. Sept., ii, 1807, 27, pl. 83.—WILSON, Am. Orn., iii, 1811, 72, pl. 24, fig. 3.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 195; Ann. Lyc. N. Y., ii, 1826, 86.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 410.—AUDUBON, Orn. Biog., i, 1831, 22; v, 1839, 460.
- Sylvia protonotaria* VIEILLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 211, pl. D22, fig. 2.
- Sylvicola protonotaria* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 171.
- Vermivora protonotarius* JARDINE, ed. Wilson's Am. Orn., i, 1832, 362, pl. 24, fig. 3.—BONAPARTE, Geog. and Comp. List, 1838, 21.—WOODHOUSE, Sitgreaves' Exped. Zuni and Col., 1853, 72 (Indian Territory; Texas).—HOY, Ann. Rep. Smithsonian Inst. for 1864 (1865), 438 (Missouri).
- Helinaia protonotarius* AUDUBON, Synopsis, 1839, 67; Birds Am., oct. ed., ii, 1841, 89, pl. 106.
- Dacnis protonotaria* AUDUBON, Birds Am., fol. ed., pl. 3.
- [*Helmitheros*] *protonotarius* BONAPARTE, Consp. Av., i, 1850, 314.
- [*Helminthophaga*] *protonotarius* CABANIS, Mus. Hein., i, 1850, 20, footnote.
- [*Motacilla*] *auricollis* GMELIN, Syst. Nat., i, 1788, 984 (based on *Le Grand Figuier de Canada* Brisson, Orn., iii, 508, pl. 26, fig. 1, etc.).
- [*Sylvia*] *auricollis* LATHAM, Index Orn., ii, 1790, 536.
- Sylvia auricollis* VIEILLOT, Enc. Méth., ii, 1823, 447.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 380.
- Sylvicola auricollis* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 431.
- M[niотilla] auricollis* GRAY, Gen. Birds, i, 1848, 196.

### Genus HELMINTHOPHILA Ridgway.

- Helminthophaga*<sup>1</sup> (not of Bechstein, 1802) CABANIS, Mus. Hein., i, 1850, 20. (Type, *Motacilla chrysoptera* Linnaeus.)
- Helminthophila* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan. 1882, 53. (Type, *Sylvia rubricapilla* Wilson.)

Small Mniotiltidae (wing less than 63.5 mm.) with the bill much shorter than head, narrowly wedge-shaped, very acute at tip, without subterminal tomial notch; rictal bristles obsolete; difference in length between wing and tail nearly if not quite equal to one-fourth the length of the former.

Bill much shorter than head, narrowly wedge-shaped, with tip very acute; culmen straight or with terminal portion very faintly decurved; maxillary tomium without subterminal notch. Nostril longitudinally

<sup>1</sup> "Von Ἑλμινος, wurm, und φαγεῖν, fressen."

oval or sub-uminate, with rather broad superior operculum or membrane. Rictal bristles obsolete. Wing moderate or rather long, with three to four outermost primaries abruptly longest (ninth usually equal to or longer than sixth); wing-tip usually shorter than tarsus. Tail equal to or longer than distance from bend of wing to tips of secondaries (except in *H. peregrina*), even, slightly emarginate, or double-rounded, the rectrices rather narrow. Tarsus much longer than commissure, nearly one third as long as wing (except in *H. peregrina*), its scutella indistinct; middle toe, with claw, decidedly shorter than tarsus; basal phalanx of middle toe united for more than half, sometimes most of, its length to outer toe, for about the basal half, or slightly more, to inner toe.

*Coloration.* Very variable, but never with the throat orange nor back black; if with a white superciliary stripe (extending above auriculars) the forehead yellow and a yellow patch on middle and greater wing-coverts.

*Nidification.*—Terrestrial, or (in *H. luciae*) the nest placed in holes or behind bark of stumps or tree trunks.

*Range.* North America in general, including highlands of Mexico; Central America and northern South America and Cuba in winter. (Ten species.)

There is considerable variation in details of external structure in this genus. *H. peregrina* stands alone in having the wing-tip much longer than the tarsus, the tail shorter than distance from bend of wing to tip of secondaries and decidedly emarginate, and is besides the only species without yellow on under parts and at the same time without chestnut or tawny-ochraceous on crown. *H. rubricapilla* is unique in the short ninth primary, which is shorter than the sixth instead of

c. Back, etc., gray; malar stripe and under parts of body white. (Eastern North America, south in winter to Colombia.)

*Helminthophila chrysoptera* (p. 448)

cc. Back, etc., olive-green; malar stripe and under parts of body yellow. (Eastern United States.) ..... *Helminthophila lawrencii* (p. 452)

bb. Throat and auricular region white or yellow.

c. Back, etc., gray; under parts white, or white and yellow. (Eastern United States.) ..... *Helminthophila leucobronchialis* (p. 453)

cc. Back, etc., olive-green; under parts yellow. (Eastern United States, south in winter to Nicaragua.) ..... *Helminthophila pinus* (p. 455)

aa. Wings unicolored, or without distinct if any white or yellow tips to middle and greater coverts.

b. Rump and upper tail-coverts concolor with back.

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way, Bull. Nutt. Orn. Club, v, 1880, 237.) Its characters and synonymy are as follows:

*Adult male*.—(Type, no. 1394, coll. Frank W. Langdon, Madisonville, Hamilton County, Ohio, May 1, 1880): Forehead, anterior portion of crown, and superciliary region, back to about 2.54 mm. behind the eye, gamboge yellow, soiled by indistinct olive-greenish tips to the feathers; rest of upper parts uniform olive-green, the wings more grayish, but still with olive-green prevailing; the middle and greater coverts passing into lighter or clearer olive-green at tips (abruptly so on middle coverts), forming two indistinct bands across the wing; tail dull olive-green, the hidden portion of the feathers (including inner webs) dull brownish slate, the exterior rectrix with a white margin near the tip, and showing an ill-defined lighter space extending obliquely from this white margin to the shaft; upper half of the frontal antæ blackish; lores solid black; auriculars blackish, but this much broken by olive-green tips to the feathers; a suborbital yellow spot, nearly as large as the eye itself, this on one side of the head connected with the yellow below but on the other side, cut off from it by the interposition of a blackish line connecting the dusky of the auriculars with the black of the lores. On each side the crown, a black line, commencing over about the middle of the eye and extending backward for about 7.11 mm., but mostly concealed by the overlying olive-green tips to the feathers; under parts, including the malar region and under tail-coverts, continuous gamboge yellow, decidedly paler and duller on the tail-coverts; sides of breast, sides, and flanks, strongly shaded with olive-green; under wing-coverts grayish white, tinged with yellow; axillars light gamboge; "bill, in the flesh, black, excepting extreme tip and base of lower mandible, which are bluish horn-color;" "eyes dark brown; tarsi and toes pale brownish; claws paler;" total length (fresh specimen), 120.6; wing (skin), 64.8; tail, 50.8; culmen, 14; bill from nostril, 8.1; depth of bill at base, 4.1; tarsus, 19; middle toe, 10.7. (Wing measured by placing it flat against rule; tail measured from base of coccyx.)

*Helminthophaga cincinnatiensis* LANGDON, Journ. Cinc. Soc. N. H., iii, July, 1880, 119, 120, pl. 6 (Madisonville, Hamilton Co., Ohio; coll. F. W. Langdon), Bull. Nutt. Orn. Club, v, 1880, 208, pl. 4.—RIDGWAY, Bull. Nutt. Orn. Club, v, 1880, 237 (crit.; suggests hybrid origin; *Helminthophila pinus* + *Oporornis formosa*); Nom. N. Am. Birds, 1881, no. 78\*.—COUES, Check List, 2d ed., 1882, no. 101.—MAYNARD, Birds Eastern U. S., 1882, 519.

*H[elminthophila] cincinnatiensis* COUES, Key N. Am. Birds, 2d ed., 1884, 293.—RIDGWAY, Man. N. Am. Birds, 1887, 487.

*Helminthophila cincinnatiensis* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 354.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 234, footnote.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, 356 (Hypothetical List, no. 22).



- c. Inner web of outermost rectrix with a white patch in middle or subterminal portion; forehead yellow (male) or light yellowish-olive, different from color (gray) of crown (female); chest black (male) or grayish (female). (Humid division of Lower Austral life-zone.)

*Helminthophila bashmani* (p. 458)

- cc. Inner web of outermost rectrix without white patch; forehead not yellow, if yellowish olive the crown also of that color; chest neither black nor grayish.

- d. Under tail-coverts and abdomen white. (Eastern North America, south in winter to Colombia and Venezuela.) *Helminthophila peregrina* (p. 460)

- dd. Under tail-coverts and abdomen yellow.

- e. Head not gray; no white orbital ring; adult male with crown-spot orange-rufous or ochraceous. (*Helminthophila celata*.)

- f. Upper parts grayish olive-green, under parts pale olive-yellowish. (Central and eastern North America, south in winter to Gulf States and eastern Mexico).....*Helminthophila celata celata* (p. 462)

- ff. Upper parts bright olive-green, under parts bright olive-yellow or canary yellow.

- g. Tail shorter (averaging 47 in male, 46.2 in female); bill smaller (exposed culmen averaging 9.4 in male, 10.2 in female). (Pacific coast, from Alaska to Guatemala.)

*Helminthophila celata lutescens* (p. 466)

- gg. Tail longer (averaging 49.8 in male, 49.5 in female); bill larger (exposed culmen averaging 11.4 in male, 10.4 in female). (Santa Barbara islands, California.)

*Helminthophila celata sordida* (p. 467)

- cc. Head (except chin and throat) gray; a white orbital ring; adult male with crown-spot chestnut. (*Helminthophila rubricapilla*.)

- f. Duller in color. (Eastern North America, south in winter to Guatemala.).....*Helminthophila rubricapilla rubricapilla* (p. 468)

- ff. Brighter in color. (Western United States, south in winter to western Mexico).....*Helminthophila rubricapilla gutturalis* (p. 470)



*Adult male in spring and summer.*—Forehead and crown yellow (lemon or gamboge); supra-auricular region, more or less extensively, white (sometimes this carried forward over eyes or even to along sides of forehead); rest of upper parts, including middle pair of rectrices, plain gray;<sup>1</sup> exposed portion of middle and greater wing-coverts mostly light lemon or gamboge yellow, forming a large and conspicuous patch on the wing; remiges and rectrices (except middle pair of latter) slate-blackish, edged with gray, the secondaries usually slightly tinged with olive-green; inner webs of three outermost rectrices extensively white terminally, this occupying the terminal half, more or less, on the exterior rectrix; lores, suborbital region, auricular region, and throat (sometimes chin also) uniform black; a broad malar stripe and under parts of body white, the latter shaded with gray laterally; bill black; iris brown; legs and feet dark brownish in dried skins.

*Adult male in winter.*—Similar to the spring and summer plumage, but yellow of crown and gray of back, etc., more or less obscured by olive-green tips to feathers, and the bill brownish with paler mandible. (In younger specimens the feathers of the black throat-patch narrowly margined with white.)

*Adult female.*—Similar to adult male but duller in color, with black of throat and sides of head replaced by gray; yellow of forehead and crown less distinct, sometimes (in younger individuals ?) replaced by olive-green; gray of upper parts and of sides usually more or less tinged with olive-green; white of breast and abdomen duller, often tinged with olive-yellow, especially in winter.

*Young.*—Above plain dull grayish olive, becoming brighter, more yellowish olive-green, on rump, upper tail-coverts, and edges of rectrices and remiges; middle and greater wing-coverts tipped with pale yellowish or dull yellowish white, producing two narrow bands; sides of head light grayish olive, the lores, orbits, malar region, and chin dull whitish or dull pale yellowish; throat and chest dull light grayish olive; rest of under parts dull pale yellow.

*Adult male.*—Length (skins), 106.7–114.3 (109.5); wing, 59.7–65 (62.2); tail, 43.2–47.5 (46.2); exposed culmen, 10.4–11.4 (10.7); tarsus, 17–18 (17.5).<sup>2</sup>

*Adult female.*—Length (skins), 104.1–109.2 (107.4); wing, 57.7–63.5

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<sup>1</sup> Slightly bluish slate-gray.

<sup>2</sup> Nine specimens.

(59.9); tail, 44.2-48 (45.5); exposed culmen, 10.7-11.4 (10.9); tarsus, 17.5-18.3 (17.8).<sup>1</sup>

Eastern United States north regularly to Massachusetts, New York, southwestern Ontario (Hamilton), northern Michigan (Mackinac Island), southern Minnesota, etc., casually (?) to Manitoba (near Winnipeg); breeding southward to northern New Jersey, Pennsylvania, northern Indiana, northern and central Illinois (south to Richland County?) etc., and southward along Allegheny Mountains to South Carolina (Pickens County, 2,500 feet and upward), and eastern Tennessee (Sawyers Springs); south in winter to Cuba and through eastern Mexico and Central America to Colombia.

[*Motacilla*] *chrysoptera* LINNEUS, Syst. Nat., ed. 12, i, 1766, 333 (based on *The Golden-winged Flycatcher*, *Muscicapa alba aurea* Edwards, Gleanings Nat. Hist., ii, 189, pl. 299).—GMELIN, Syst. Nat., i, 1788, 971.

[*Sylvia*] *chrysoptera* LATHAM, Index Orn., ii, 1790, 541.

*Sylvia chrysoptera* VIEILLIOT, Ois. Am., Sept., ii, 37, pl. 97; Enc. Méth., ii, 1823, 438.—WILSON, Am. Orn., ii, 1810, 113, pl. 15, fig. 5 (fig. "6" in text).—BONAPARTE, Am. Orn., i, 1825, 12, pl. 1, fig. 3.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 411.—AUDUBON, Orn. Biog., v, 1839, 154, pl. 414.

*Vermivora chrysoptera* JARDINE, ed. Wilson's Am. Orn., i, 1832, 259.—BONAPARTE, Geog. and Comp. List, 1838, 21.

*Sylvicola chrysoptera* RICHARDSON, Rep. Brit. Assoc., 1836 (1837), 171.

*Helinaia chrysoptera* AUDUBON, Synopsis, 1839, 67; Birds Am., oct. ed., ii, 1841, 91, pl. 107.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).

*M[niotilta]* *chrysoptera* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *chrysoptera* GRAY, Hand-list, i, 1869, 239, no. 3459.

[*Helmitheros*] *chrysoptera* BONAPARTE, Consp. Av., i, 1850, 315.

*Helmitheros chrysoptera* SCLATER, Proc. Zool. Soc. Lond., 1865, 143 (Bogota, Colombia).

*H[elminthophaga]* *chrysoptera* CABANIS, Mus. Hein., i, 1850, 20, footnote.

*Helminthophaga chrysoptera* BAYLI, Rep. Pacific R. R. Surv., ix, 1858, 255, Cat. N.

- 1862, 177 (do.); 1872, 411 (do.); Repert Fisico-Nat. Cuba, i, 1865, 232 (do.).—SCLATER, Cat. Am. Birds, 1862, 28 (Bogota).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Lion Hill, Isth. Panama), 1879, 494 (Antioquia, Colombia).—DRESSER, Ibis, 1865, 477 (San Antonio, Texas).—McILWRAITH, Proc. Essex Inst., v, 1866, 85 (Hamilton, Ontario).—SALVIN, Proc. Zool. Soc. Lond., 1867, 135 (Santa Fé, Veragua); 1870, 182 (Calovevera, Veragua).—FRANTZICK, Journ. fur Orn., 1869, 293 (Candelaria Mts., Costa Rica).—COCES, Check List, 1873, no. 63; 2d ed., 1882, no. 102; Birds N. W., 1874, 49; Birds Col. Val., 1878, 216, footnote.—SNOW, Birds Kansas, 1873, 4.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 192, pl. 11, fig. 2. RIDGWAY, Ibis, 1876, 170; Nom. N. Am. Birds, 1881, no. 81.—WARREN, Bull. Nutt. Orn. Club, i, 1876, 6-8 (e. Massachusetts; nesting habits, etc.).—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 56 (descr. young).—BUCKNELL, Bull. Nutt. Orn. Club, iii, 1878, 130 (Riverdale, New York, May 11).—SALVIN and GOODMAN, Biol. Centr.-Am., Aves, i, 1880, 114; Ibis, 1880, 117 (Minca, Colombia, 2,000 ft. alt.).
- [*Helminthophaga*] *chrysoptera* COCES, Key N. Am. Birds, 1872, 94.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.—CORY, List Birds W. I., 1885, 7.
- II [*Helminthophaga*] *chrysoptera* NELSON, Bull. Essex Inst., viii, 1876, 98, 152 (n. e. Illinois, breeding).—RIDGWAY, Ibis, 1876, 168 (diagnosis).
- Helminthophaga chrysoptera* CABANIS, Journ. fur Orn., 1890, 328 (Costa Rica).
- Helminthophila chrysoptera* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan., 1882, 53; Orn. Illinois, i, 1889, 127 (breeding in Richland Co.?).—SHARPE, Cat. Birds Brit. Mus. x, 1885, 235, 639.—HOV, Auk, ii, 1885, 102 (Monroe Co., Michigan; descr. nest and eggs).—BREWSTER, Auk, iii, 1886, 173 (Jackson and Macon counties, North Carolina, breeding at 2,000-4,100 ft.).—CORY, Auk, iii, 1886, 28 (Cuba); Birds W. I., 1889, 42, Cat. W. I. Birds, 1892, 117 (Cuba).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 642.—COOKE, Bird Migr. Miss. Val., 1888, 240 (Mississippi Valley records, dates, etc.).—BISHOP, Auk, vi, 1889, 193 (Seymour and Portland, Connecticut).—SCOTT, Auk, vii, 1890, 17 (Key West, Florida, 1 spec., Aug. 25).—CHERRIE, Auk, vii, 1890, 335 (San José, Costa Rica, Sept. 15, abundant); viii, 1891, 271 (San José, Oct. 2).—BATCHELDER, Auk, vii, 1890, 404 (near Winnipeg, Manitoba, May 24).—LOOMIS, Auk, vii, 1890, 127 (Pickens Co., South Carolina, breeding at 2,500 ft.); viii, 1891, 331 (Cesars Head, South Carolina, breeding); x, 1893, 154 (Cesars Head).—TONN, Auk, viii, 1891, 397 (breeding in Butler, Beaver, and Armstrong counties, Pennsylvania); x, 1893, 40 (breeding in Indiana Co., Pennsylvania).—SAGE, Auk, x, 1893, 208 (Portland, Connecticut, com. summer resid.; habits).—WHITE, Auk, x, 1893, 227 (Mackinac I., Michigan).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 483 (Escondido R., Nicaragua, Nov. 5).—BROADB, Proc. Ac. Nat. Sci. Phila., 1895, 494 (Sawyers Springs, e. Tennessee, breeding); Auk, xvi, 1899, 312 (Beaver, Allegheny, and Westmoreland counties, w. Pennsylvania, breeding).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 160 (Pueblo Viejo, prov. Santa Marta, Colombia, Mar. 20).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 178 (Bonda, etc., prov. Santa Marta, Sept. to Dec.).—WOOD (J. C.), Auk, xvii, 1900, 391 (Detroit, Michigan, breeding).
- II [*Helminthophila*] *chrysoptera* COCES, Key N. Am. Birds, 2d ed., 1884, 294.—RIDGWAY, Man. N. Am. Birds, 1887, 486.
- Helminthophila chrysoptera* NEERLING, Our Native Birds, etc., i, 1893, 184, pl. 11, fig. 4.
- [*Motacilla*] *flavifrons* GMELIN, Syst. Nat., i, 1788, 976 (based on Yellow-fronted Warbler Latham, Gen. Synop., ii, pt. 2, 461; Pennant, Arctic Zool., ii, 494).
- [*Sylvia*] *flavifrons* LATHAM, Index Orn., ii, 1790, 541.
- Sylvicola inornata* SWAINSON, Philos. Mag., new ser., i, 1827, 434 (Mexico).

## HELMINTHOPHILA LAWRENCII (Herrick).

## LAWRENCE'S WARBLER.

Pattern of coloration the same as in *H. chrysoptera* (except, sometimes, as to wing markings), but back, etc., yellowish olive green and the malar stripe and under parts (except throat) pure gamboge yellow, as in *H. pinus*; wing-bands usually (?) separated and whitish, as in *H. pinus*.

*Adult male in spring.* Forehead and anterior half of crown intense gamboge yellow, verging to orange; chin, wide malar stripe, and entire lower parts of body (except under tail-coverts) rich gamboge yellow; lores, suborbital region, and auriculars, deep black; upper eyelid yellow, the lower black; a gular and jugular patch of deep black, of triangular form, pointed anteriorly, greatly widened on the chest, where its posterior outline is convex; thighs dull white, stained with yellow; under tail-coverts white, the tips of the feathers faintly stained with yellow; occiput, hindneck, back, rump, and upper tail-coverts bright olive-green; wings and tail bluish gray, the middle and greater wing-coverts tipped with white, forming two wide and tolerably distinct bands, the greater coverts and tertials narrowly edged with olive green; inner webs of four outer rectrices with more or less white, amounting to only an elongated speck on the fourth, but on the first occupying nearly the whole web; wing, 59.7; tail, 53.3; culmen, 11.4; tarsus, 17.8.<sup>1</sup> (Description from the type in collection of Harold Herrick, New York City.)

*Immature male (second year).*—Similar to the fully adult plumage, but colors duller and all the markings less sharply defined; black throat-patch broken by narrow yellow margins to the feathers, especially for the anterior half; black postocular patch less extensive than in the adult male, and less deeply black; yellow of head and lower parts less pure, as well as less intense; wing, 63.5; tail, 54.6; culmen, 12.7; tarsus, 17.8; middle toe, 10.2.<sup>1</sup> (From specimen in the Lawrence collection, from Hoboken, New Jersey; spring of 1876.)

(This bird, the status of which has not yet been fully determined, is essentially a *H. chrysoptera* with olive-green replacing the gray of that species and bright yellow replacing the white, but with white wing-bands, as in typical *H. pinus*.<sup>2</sup> It is also essentially a *H. pinus* with

<sup>1</sup>Wing measured with primaries pressed flat against the rule, and tail measured to base of the coccyx.

<sup>2</sup>The character of the wing-markings is, however, not strictly diagnostic in the case of either *H. chrysoptera* or *H. pinus*. Sometimes the yellow wing-patch of the former is distinctly separated into two bands by the extensively dark basal portion of the greater coverts, while occasionally the color of these bands, or even of the larger patch itself, may be nearer white than yellow. On the other hand, *H. pinus* sometimes has the two bands so nearly confluent as to form quite as large and continuous a patch as in *H. chrysoptera* (sometimes the anterior band is wanting altogether and the posterior one obsolete), while frequently the band or patch is more or less strongly tinged with yellow.

the black throat-patch and broad black band on side of head of *H. chrysoptera*.]

New Jersey (Passaic River; Hoboken; Morristown); New York (Westchester County); Connecticut (Portland; New Haven; Stamford; Fairfield County).

*Helminthophaga lawrenci* HERRICK, Proc. Ac. Nat. Sci. Phila., 1874, 220, pl. 15 (Passaic R., New Jersey; coll. H. Herrick).—RIDGWAY, Ibis, 1876, 170.—COUES, Birds Col. Val., 1878, 214, footnote; Check List, 2d ed., 1882, no. 99.—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 209, footnote.

*H[elminthophaga] lawrenci* RIDGWAY, Ibis, 1876, 168, 169 (diagnosis; crit.).

*Helminthophaga lawrenci* HERRICK, Bull. Nutt. Orn. Club, ii, 1877, 19 (Hoboken, New Jersey). LANGDON, Bull. Nutt. Orn. Club, v, 1880, 209, footnote.—RIDGWAY, Nouv. N. Am. Birds, 1881, no. 80. BREWSTER, Bull. Nutt. Orn. Club, vi, 1881, 218-225, in text (crit.).—MAYNARD, Birds E. U. S., 1882, 509.

*H[elminthophila] lawrenci* RIDGWAY, Bull. Nutt. Orn. Club, vi, Jan. 1882, 53; Auk, ii, 1885, 359, 361, 363, in text, Man. N. Am. Birds, 1887, 486.—BREWSTER, Auk, iii, 1886, 411 (Morristown, New Jersey, hybrid with *H. pinus*).—EAMES, Auk, vi, 1889, 305, 306, 307, 308, in text (Connecticut; habits, etc.).—PAGE, Auk, x, 1893, 209, in text (Portland, Connecticut, 1 spec., May 14, 1887).

*Helminthophila lawrenci* AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 20.—VOORHEES, Auk, v, 1888, 427 (Westchester Co., New York).—BISPOE, Auk, vi, 1889, 193 (New Haven and Stamford, Connecticut).

*H[elminthophila] lawrenci* COUES, Key N. Am. Birds, 2d ed., 1884, 293.

*Helminthophila lawrenci* SHAPE, Cat. Birds Brit. Mus., x, 1885, 233, footnote.

*H[elminthophila] lawrenci* VOORHEES, Auk, xi, 1894, 259, in text (Fairfield Co., Connecticut).

#### HELMINTHOPHILA LEUCOBONCHIALIS (Brewster).

##### BREWSTER'S WARBLER.

Similar in pattern of coloration (except, sometimes, as to wing-markings) to *H. pinus*, but the back, etc., bluish gray instead of olive-green, and the under parts partly (sometimes wholly) white, instead of yellow; wing-bands usually (?) confluent and yellow (as in *H. chrysoptera*), sometimes separated and white (as in *H. pinus*).

*Adult male.* Forehead and anterior portion of crown gamboge yellow, becoming white laterally, immediately above the black line through eye; occiput, hindneck, back, scapulars, rump, upper tail-coverts, and tail plain bluish gray (between slate-gray and plumbeous); exposed portion of middle and greater wing-coverts mostly yellow (canary or sulphur), forming a large and conspicuous patch; rest of wings dusky with bluish gray edgings, these more or less tinged with olive-green on tertials; inner webs of three outer rectrices extensively white terminally, this occupying more than terminal half on outermost rectrix; lower half of lores and a postocular streak black; suborbital region, greater part of auricular region, malar region, and entire under parts white, the sides and flanks pale gray, the breast sometimes tinged with yellow; maxilla black, mandible more grayish; iris brown; legs and feet



dusky horn color (in dried skins); length (skins), 115.6-120.6 (118.1); wing, 61.5-63 (62.2); tail, 46.2-47.5 (46.7); exposed culmen, 11.2-11.7 (11.4); tarsus, 17.8-18.3 (18).<sup>1</sup>

*Adult female.*—Similar to the adult male, but duller in color; yellow of forehead and crown more or less obscured by olive-green tips to feathers; gray of upper parts more or less tinged with olive green, and white of under parts more or less tinged with yellow, especially on breast; black line on lores and behind eye duller, more dusky grayish; length (skin), 121.9; wing, 61.5; tail, 47.5; exposed culmen, 10.9; tarsus, 17.3.<sup>2</sup>

[In its typical form, as described above, this bird is essentially a *H. chrysoptera*, without the black (male) or gray (female) throat-patch of that species and with the black or gray band on side of head reduced to a narrow streak, as in *H. pinus*. It is also essentially a *H. pinus* with the wing of *H. chrysoptera*, the olive-green of upper parts replaced by gray and the yellow of sides of head and under parts replaced by white. Variations tend more toward *H. pinus* than toward *H. chrysoptera*; for, while the under parts are often considerably tinged with yellow (sometimes extensively yellow, the whole breast being frequently bright yellow) and the upper parts tinged with olive-green, there is seldom, if ever, an indication of the black or gray throat-patch of *H. chrysoptera*. The black postocular streak, however, is sometimes greatly extended, both as to length and width, specimens thus marked approaching *H. chrysoptera* in this respect. It is altogether probable, both in the case of this form and *H. laurencii*, that dichromatism as well as hybridism enters into the question of their origin; in other words, while *H. pinus* apparently exhibits, rarely, a white and gray (instead of yellow and olive-green) phase, and *H. chrysoptera*, as rarely, a yellow and olive-green, instead of white and gray, phase, the two species interbreed to such an extent, not only with one another, but each with *H. leucobronchialis* and *H. laurencii* (the hybrids being fertile *inter se*) that the problem is a very complicated one, and therefore most difficult to work out satisfactorily.<sup>3</sup>

Eastern United States. Massachusetts (Newtonville; Hudson); Connecticut (Wauregan; Suffield; Deep River; Portland; Saybrook; Seymour; New Haven; North Haven); New York (Rockland County; Sing Sing; Croton Point; Parkville; Long Island); Pennsylvania (Delaware County; Chester County); New Jersey (Maplewood; Englewood; Morristown); Maryland (Riverdale); Virginia (Alexandria County); Louisiana (Mandeville); Michigan (Ottawa County).

<sup>1</sup>Two specimens.

<sup>2</sup>One specimen.

<sup>3</sup>See Brewster, Bull. Nutt. Orn. Club, vi, 1881, 218; Auk, iii, 1886, 411; and Ridgway, Auk, ii, 1885, 359.

- Helminthophaga leucobronchialis* BREWSTER, American Sportsman (newspaper), v, Oct. 17, 1874, 33, in text (Newtonville, Massachusetts, coll. W. Brewster); Bull. Nutt. Orn. Club, i, Jan., 1876, 1, pl. 1; in, 1878, 99 (Waukegan, Connecticut), 199 (Suffield, Connecticut); vi, 1881, 218 (crit.; considered as hybrid between *H. chrysoptera* and *H. pinus*); Auk, i, 1884, 91 (Deep R., Connecticut; crit.).—COLES, Birds N. W., 1874, 760, in index, Birds Col. Val., 1878, 213, Check List, 2d ed., 1882, no. 100.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439. RIDGWAY, Ibis, Apr., 1876, 170; Nom. N. Am. Birds, 1881, no. 82.—MAYNARD, Birds Eastern U. S., 1882, 509. MINOT, Birds New Eng., 1877, 92.—TROTTER, Bull. Nutt. Orn. Club, ii, 1877, 79 (Delaware Co., Pennsylvania); in, 1878, 44; iv, 1879, 59 (Rockland Co., New York); Proc. Ac. Nat. Sci. Phila., 1877, 59 (do.).—FISHER, Bull. Nutt. Orn. Club, iv, 1879, 234 (Sing Sing, New York); vi, 1881, 245 (Sing Sing and Croton Point, New York).—PYRDIE, Bull. Nutt. Orn. Club, iv, 1879, 185 (Hudson, Massachusetts; Portland and Saybrook, Connecticut, Ottawa Co., Michigan).—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 89.—LANGDON, Bull. Nutt. Orn. Club, v, 1880, 209, footnote.—SAGE, Auk, i, 1884, 91 (Deep R., Connecticut).
- H[elminthophaga] leucobronchialis* RIDGWAY, Ibis, 1876, 168, 169 (diagnosis, crit.).
- H[elminthophila] leucobronchialis* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan., 1882, 53; Man. N. Am. Birds, 1887, 486.—BREWSTER, Auk, iii, 1886, 411 (concerning supposed hybrid origin).
- Helminthophila leucobronchialis* PALMER, Auk, ii, 1885, 304 (Alexandria Co., Virginia). SAGE, Auk, ii, 1885, 304 (New Haven, Connecticut); vi, 1889, 279 (Portland, Connecticut); x, 1893, 208 (do.; regular summer resident); xii, 1895, 207 (do.; interbreeding with *H. chrysoptera*).—RIDGWAY, Auk, ii, 1885, 359-363 (crit.).—RIKER, Auk, ii, 1885, 378 (Maplewood, New Jersey).—FISHER, Auk, ii, 1885, 378 (Sing Sing, New York, 2 spec.), 379 (interbreeding with *H. pinus*).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 235, footnote.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, 355 (Hypothetical List, no. 21).—THURBER, Auk, iii, 1886, 411 (near Morristown, New Jersey).—CHAPMAN, Auk, iv, 1887, 349 (Morristown, New Jersey); vi, 1889, 304 (Englewood, New Jersey), vii, 1890, 291 (do.; song), viii, 1891, 318 (Mandeville, Louisiana).—EAMES, Auk, v, 1888, 427 (Seymour, Connecticut, 6 spec.; breeding), vi, 1889, 305-310 (s. Connecticut; habits, etc.).—STONE, Auk, v, 1888, 115 (Chester Co., Pennsylvania).—BISHOP, Auk, vi, 1889, 193 (New Haven, Saybrook, and Portland, Connecticut); xi, 1894, 79 (North Haven, Connecticut; breeding).—HOWELL, Auk, ix, 1892, 306 (Parkville, Long Island).—RICHMOND, Auk, xii, 1895, 307 (Riverdale, Maryland).
- H[elminthophila] leucobronchialis?* COLES, Key N. Am. Birds, 2d ed., 1882, 293.
- Helminthophaga pinus* GIBBS, Daily Democrat (newspaper, Grand Rapids, Michigan), June 1, 1879 (Ottawa Co., Michigan).—RIDGWAY, Bull. Nutt. Orn. Club, iv, 1879, 233 (crit.; referred to *H. leucobronchialis*).

## HELMINTHOPHILA PINUS (Linnaeus).

## BLUE-WINGED WARBLER.

Throat usually entirely pure yellow, like rest of under parts, the forehead and sides of head (mostly) also yellow; a narrow black streak before and behind eye.

*Adult male.*—Forehead and crown bright yellow (lemon or gamboge); occiput, hindneck, back, scapulars, rump, and upper tail-coverts bright olive-green, more yellowish on rump, the upper tail-coverts tinged with gray; wing-coverts and tertials gray, the middle and

greater coverts usually more or less broadly tipped with white, forming two bands;<sup>1</sup> secondaries and primaries dusky edged with gray, their inner webs broadly edged with white; tail gray, the three outermost rectrices with inner webs extensively white, the fourth, sometimes even the fifth, occasionally showing a terminal white spot; lower half of lores and a pointed postocular streak black; sides of head below this black streak, with entire lower parts (except under tail-coverts), clear lemon-yellow;<sup>2</sup> the sides and flanks slightly tinged with olive-green; under tail-coverts and under wing-coverts white; bill black in summer, brownish, with paler mandible, in winter; iris brown; legs and feet horn brownish in dried skins; length (skins), 101.6-115.6 (108.2); wing, 57.7-63.2 (60.2); tail, 43.4-48.3 (46); exposed culmen, 10.4-11.4 (10.7); tarsus, 17-18 (17.3).<sup>3</sup>

*Adult female.* Similar to the male but duller in color; olive-green of upper parts covering crown, sometimes the forehead also; loreal and postocular mark dusky grayish instead of black; gray of wing-coverts and tertials usually tinged with olive-green; white wing-bars averaging much less distinct; yellow of under parts less bright and pure; length (skins), 109.2-112.5 (111.2); wing, 56.1-59.2 (57.7); tail, 45-46.5 (45.7); exposed culmen, 10.4-11.4 (10.9); tarsus, 16.8-18.8 (17.8).<sup>4</sup>

Eastern United States, breeding northward to southern Connecticut (New Haven; Saybrook; Portland), southeastern New York (lower Hudson Valley), Pennsylvania (Chester and Delaware counties), northern Ohio (Wayne and Warren counties), northern Indiana (Carroll and Wabash counties), northern Illinois, southern Iowa (Decatur and Mahaska counties), eastern Nebraska (near Omaha), etc.; occasional straggler to Massachusetts (Dedham; West Roxbury; near Boston), Michigan (Mackinac Island), and Minnesota (Fillmore County; near



*Sylvia pinus* Vieillot, Ois. Am. Sept., ii, 1807, 44

[*Motacilla*] *pinus* Turton, Syst. Nat., i., 1800, 606.

*Helminthophaga pinus* Baird, Rep. Pacific R. R. Surv., ix, 1858, 254; Cat. N. Am. Birds, 1859, no. 180; Review Am. Birds, 1864, 174.—SCLATER and SALVIN, Ibis, 1859, 11 (Guatemala).—SCLATER, Cat. Am. Birds, 1862, 28 (Guatemala).—COUES, Check List, 1873, no. 62; 2d ed., 1882, no. 98; Birds N. W., 1874, 49; Birds Col. Val., 1878, 214, footnote; Bull. Nutt. Orn. Club, iii, 1878, 184 (West Chester, Pennsylvania; descr. nest and eggs).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 124, 175 (Kansas).—TRIPPE, Proc. Essex Inst., xv, 1873, 234 (Decatur and Makaska counties, s. Iowa; breeding).—AMES, Bull. Minn. Acad. Sci., i, 1874, 56 (Minnesota).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 195, pl. 11, fig. 1.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (Saybrook, Connecticut, breeding); xx, 1879, 265 (Dedham, Massachusetts; West Roxbury, Massachusetts, 1 spec., May 17, 1878); Bull. Nutt. Orn. Club, v, 1880, 48 (New Haven, Connecticut, breeding).—RIDGWAY, Ibis, 1876, 170; Nom. N. Am. Birds, 1881, no. 79.—DEANE, Bull. Nutt. Orn. Club, iii, 1878, 188 (West Roxbury, Massachusetts, May).—LANGDON, Birds Cincinnati, 1877, 5 (Hamilton Co., Ohio, breeding).—BICKNELL, Bull. Nutt. Orn. Club, iii, 1878, 130 (Riverdale, New York, breeding).—MERRILL, Proc. U. S. Nat. Mus., i, 1878, 123 (Hidalgo, Texas, May, 1 spec.).—RHODES, Bull. Nutt. Orn. Club, iv, 1879, 234 (Chester and Delaware counties, Pennsylvania, breeding).—RATHBUN, Revised List Birds Centr. N. Y., 1879, 10 (Pen Yan, New York, 1 spec.).—SALVIN and GORMAN Biol. Centr.-Am., Aves, i, 1880, 115 (Choctum and Teleman, Guatemala, etc.).—BOTCHARD, Proc. Zool. Soc. Lond., 1883, 440 (Yucatan).

[*Helminthophaga*] *pinus* Coues, Key N. Am. Birds, 1872, 94.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.

[*Helminthophaga*] *pinus* Ridgway, Ibis, 1876, 168 (diagnosis)

[*Mniotilta*] *pinus* Gray, Hand-list, i, 1869, 239, no. 3455.

*Helminthophaga pinus* Ridgway, Bull. Nutt. Orn. Club, vii, Jan., 1882, 53; Orn. Illinois, i, 1889, 126; Auk, viii, 1891, 334 (Abaco I., Bahamas, Apr. 9, 1 spec.).—BICKNELL, Auk, i, 1884, 210 (song).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 237, 639.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 641.—BUTLER, Bull. Brooklyn Soc. N. H., no. 2, 1886, 34 (Franklin Co., Indiana, common summer resid.).—ALLEN, Bull. Am. Mus. N. H., i, 1886, 256 (Dedham, Massachusetts, 1 spec., West Roxbury, Massachusetts, 1 spec., May 17, 1878).—COOKE, Bird Migr. Miss. Val., 1888, 240 (Mississippi Valley localities and dates).—BISHOP, Auk, vi, 1889, 192 (coast of Connecticut, common).—EVERMANN, Auk, vi, 1889, 27 (Carroll Co., Indiana, breeding).—SCOTT, Auk, vii, 1890, 17 (Key West, Florida, Aug. 30, 1 spec.), 313 (Garden Key, Tortugas, Mar. 23-25).—ROBERTS, Auk, vii, 1890, 214 (near Minneapolis, Minnesota, May 17; Fillmore Co., Minnesota, Aug. 28).—TODD, Auk, viii, 1891, 307 (Beaver Co., Pennsylvania, May 2, 1 spec.).—GOSS, Birds Kansas, 1891, 540 (e. Kansas, summer resid.).—SMITH (R. W.), Journ. Cinc. Soc. N. H., 1891, 123 (Warren Co., Ohio, breeding).—COUS, Cat. W. I. Birds, 1892, 117, 155 (Abaco I., Bahamas).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 483 (Greytown and Rio Escondido, Nicaragua, Jan., Feb.).—SAGE, Auk, x, 1893, 208 (Portland, Connecticut, rare summer resid.).—(?) WHITE, Auk, x, 1893, 227 (Mackinac I., Michigan, July 1).—ULREY and WALLACE, Proc. Ind. Ac. Sci., 1895, 150 (Wabash Co., Indiana, breeding).—OVERHOLSER, Bull. Ohio Agric. Ex. Sta., tech. ser., i, 1896, 323 (Wayne Co., n. e. Ohio, rare summer resid.).—HADLEY, Proc. Ind. Ac. Sci., 1897, 190 (Wayne Co., Indiana, migrant).—BRACKETT, Auk, xv, 1898, 59

- (near Boston, Massachusetts, 1 spec., May 15). —RHOADS, Auk, xvi, 1899, 312 (Beaver, Laurel Ridge, etc., w. Pennsylvania). —BAGGS, Proc. Biol. Soc. Wash., xiii, 1899, 105 (Chirua, prov. Santa Marta, Colombia, Mar. 21). —BREWER, Proc. Nebr. Orn. Un., 2d an. meet., 1901, 57 (near Omaha, Nebraska, breeding).
- Helminthophila pinus* COLES, Key N. Am. Birds, 2d ed., 1884, 293. —RIDGWAY, Man. N. Am. Birds, 1887, 486.
- Helminthophaga pinus* GREGG, Proc. Elmira Acad. Sci., 1870 (p. 8 of reprint).
- Helminthophaga pinus* COLES, Proc. Essex Inst., v, 1868, 271 (s. New England).
- Helminthophila pinus* NEHRLING, Our Native Birds, etc., i, 1893-1894, pl. 11, fig. 2.
- Sylvia solitaria* WILSON, Am. Orn., ii, 1810, 109, pl. 15, fig. 4 (s. Pennsylvania; coll. Peale Mus.). —VIEILLER, Enc. Méth., ii, 1823, 450. —BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 189, Ann. Lye. N. Y., ii, 1826, 87. —NUTTALL, Man. Orn. U. S. and Can., i, 1832, 410. —AUDUBON, Orn. Biog., i, 1831, 102, pl. 20.
- Vermivora solitaria* SWAINSON, Philos. Mag., new ser., i, 1827, 434 (Vera Cruz, Mexico). —JARDINE, ed. Wilson's Am. Orn., i, 1832, 256. —BONAPARTE, Geog. and Comp. List, 1838, 21. —WOODHOUSE, Rep. Sitgreaves' Exped. Zuni and Colorado R., 1853, 72 (Indian Territory, common, breeding).
- Sylvia solitaria* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 171.
- Helminth solitaria* AUDUBON, Synopsis, 1839, 69, Birds Am., oct. ed., ii, 1841, 98, pl. 111.
- Mniotilta solitaria* GRAY, Gen. Birds, i, 1848, 196.
- [*Helminthopus*] *solitaria* BONAPARTE, Consp. Av., i, 1850, 315.
- Helminthopus solitarius* SCATER, Proc. Zool. Soc. Lond., 1858, 291 (Cordova, Vera Cruz).
- Helminthophaga solitaria* CHANIS, Mus. Heim., i, 1850, 20, footnote.

#### HELMINTHOPHILA BACHMANI (Audubon)

##### BACHMAN'S WARBLER.

*Adult male.* Forehead, orbital ring, malar region, chin (sometimes upper throat also), breast, and abdomen yellow (gamboge); anterior portion of crown black, the feathers (except sometimes the more anterior ones) margined with gray; posterior portion of crown, occiput, and hindneck plain mouse gray; back, scapulars, and rump plain olive-green, the last more yellowish; upper tail-coverts grayish olive-green; anterior portion of lesser wing-covert area clear gamboge yellow, the posterior portion, together with middle coverts, plain olive-green (concealed portion of feathers darker); greater coverts and tertials grayish olive-green; secondaries and primaries dusky grayish edged with grayish olive-green, the longer primaries edged with pale gray; tail dull gray, usually tinged with olive-green, the three to four outer rectrices with a large subterminal patch of white on inner web; auricular region olive-green, more or less tinged with gray posteriorly; chest, together with more or less of throat, black, this sometimes broken with yellow tips to feathers; flanks pale smoky grayish; longer under tail-coverts white, the shorter ones pale yellow; maxilla brownish black, the mandible slightly paler (decidedly so in winter); iris brown; legs and feet dusky horn color (in dried skins); length (skins),

106.7–116.8 (110.7); wing, 56.6–61.5 (58.9); tail, 42.7–46.7 (44.2); exposed culmen, 11.2–12.2 (11.4); tarsus, 17–17.5 (17.3).<sup>1</sup>

*Immature male in first autumn.*—Similar to the adult male, but crown entirely gray.

*Adult female.*—Much duller than the male, and without black on crown, throat, or chest; yellow of forehead indistinct, not sharply separated from gray of crown; olive-green of back, etc., more grayish; chest and sides of breast strongly shaded with gray; length (skins), 106.7–110.5 (109.2); wing, 57.9–59.7 (58.7); tail, 43.7–45 (44.4); exposed culmen, 10.9–11.9 (11.4); tarsus, 17–17.3 (17.3).<sup>2</sup>

Austroriparian district (humid division of Lower Austral life-zone) of eastern United States; north to southeastern Virginia (Ayletts, King William County), southern Indiana (Knox and Decatur counties—accidental in last?), and southeastern Missouri (Dunklin County); Cuba in winter.

*Sylvia bachmani* AUDUBON, Orn. Biog., ii, 1834, 483, pl. 183 (Charleston, South Carolina; type in coll. U. S. Nat. Mus.).

*Sylvicola bachmani* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.

*Vermivora bachmani* BONAPARTE, Geog. and Comp. List., 1838, 21.

*Helinaia bachmanii* AUDUBON, Synopsis, 1839, 68; Birds Am., oct. ed., ii, 1841, 93, pl. 108.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).—LEMBEYE, Aves de la Isla de Cuba, 1850, 36, pl. 6, fig. 1.

*M[niotilta] bachmani* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *bachmani* GRAY, Hand-list, i, 1869, 239, no. 3460.

[*Helmitheros*] *bachmani* BONAPARTE, Consp. Av., i, 1850, 315.

*Helminthophaga bachmani* GUNDLACH, Journ. für Orn., 1855, 475 (Cuba); 1861, 326, 409 (do.); 1874, 411 (do.); Repert. Fisico-Nat. Cuba, i, 1865, 322 (do.).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 255; Cat. N. Am. Birds, 1859, no. 182; Review Am. Birds, 1864, 175.—COUES, Check List, 1873, no. 64; 2d ed., 1882, no. 103; Birds Col. Val., 1878, 214, footnote.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 194, pl. 11, fig. 3.—RIDGWAY, Ibis, 1876, 170; Nom. N. Am. Birds, 1881, no. 78.—CORY, List Birds W. I., 1885, 7.—MAYNARD, Birds E. N. Am., 1882, 510.

[*Helminthophaga*] *bachmanii* COUES, Key N. Am. Birds, 1872, 94.

*H[elminthophaga] bachmani* RIDGWAY, Ibis, 1876, 168 (diagnosis).

*Helminthophila bachmani* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan., 1882, 53.—BAILEY, Bull. Nutt. Orn. Club, viii, 1883, 38 (South Carolina; descr. supposed eggs).—CORY, Auk, iii, 1886, 28 (Cuba); Birds W. I., 1889, 42; Cat. W. I. Birds, 1892, 117 (Cuba).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 640.—LAWRENCE, Auk, iv, 1887, 35–37 (Lake Pontchartrain, Louisiana); 262 (do.).—BREWSTER, Auk, iv, 1887, 165 (spec. of unknown locality in Lafresnaye coll.); viii, 1891, 149–157 (Suwanee R., Florida; habits, variations of plumage, etc.).—MERRIAM, Auk, iv, 1887, 262 (Sombrero Key, Florida, Mar. 21).—SCOTT, Auk, iv, 1887, 348 (Key West, Florida); v, 1888, 428 (do., July 26); vii, 1890, 313 (Garden Key, Tortugas, Florida, Mar. 26 and Apr. 9).—GALBRAITH, Auk, v, 1888, 323 (Lake Pontchartrain, Mar.).—CHAPMAN, Auk, vi, 1889, 278 (Oak Lodge, Brevard Co., Florida, Mar. 21).—PALMER (W.), Auk, xi, 1894, 333 (Ayletts, King William Co., Virginia, Aug.).—WAYNE, Auk, xii, 1895, 367 (Wacissa R., n. w. Florida,

<sup>1</sup> Eight specimens.

<sup>2</sup> Three specimens.

migrant).—WIDMANS, Auk, xiii, 1896, 264 (Greene Co., Arkansas, May 7-9). BEYER, Proc. Louisiana Soc. Nat. for 1897-98 (1900), 111 (Louisiana). BUTLER, Proc. Ind. Ac. Sci., 1899 (1900), 151 (near Greensburg, DeCATUR Co., Indiana, 1 spec., May 2, 1899).

*Helminthophila bachmani* COUES, Key N. Am. Birds, 2d ed., 1884, 264.—RUD-  
WAY, Man. N. Am. Birds, 1887, 487.

*Helminthophila bachmani* RUDWAY, Auk, xiv, 1897, 309 (Dunklin Co., S. E. Mis-  
souri; deser. nest and eggs). WAYNE, Auk, xviii, 1901, 274 (Mount Pleasant, South Carolina, May 15).

*Helminthophila bachmani* SHARPE, Cat. Birds Brit. Mus., x, 1885, 239.

### HELMINTHOPHILA PEREGRINA (Wilson).

#### TENNESSEE WARBLER.

*Adult male*.—Pileum and hindneck plain gray (intermediate between mouse gray and slate-gray); rest of upper parts plain olive-green, brightest on rump; remiges dusky, the secondaries edged with olive-green, the primaries with pale gray (edge of outermost primary white); tail dull gray, the outer webs of rectrices edged with olive-green, the inner webs edged with white, that of outermost rectrix usually with a white terminal spot of greater or less extent; lores and short superciliary streak white, the former with a dusky wedge-shaped streak in front of eye; a more or less distinct, but small, postocular streak of dusky; auricular region grayish; suborbital region, malar region, and under parts white, the sides and flanks shaded with gray; under wing-coverts and axillars white; maxilla brownish black, mandible slightly paler; iris brown; legs and feet horn color (in dried skins); length (skins), 102.9-119.4 (112.5); wing, 62.5-67.8 (64.5); tail, 41-46 (42.4); exposed culmen, 9.4-9.9 (9.6); tarsus, 15.5-17.8 (16.8).<sup>1</sup>

[Adult males in winter do not differ essentially from breeding birds, but have the gray of pileum, hindneck, sides, and flanks slightly tinged with olive-green, white of under parts slightly tinged with yellow, and basal half of mandible distinctly light colored. Some spring males (probably younger birds), however, are like winter specimens in all these respects.]

*Adult female*.—Similar to the adult male in coloration, but with gray of pileum and hindneck never so pure, being usually more or less tinged with olive-green, and with superciliary streak and under parts more or less tinged with yellow; length (skins), 106.7-119.4 (109.7); wing, 58.4-61 (59.4); tail, 39.1-42.4 (41.1); exposed culmen, 9.4-10.2 (9.6); tarsus, 15.7-17.3 (16.3).<sup>1</sup>

*Young male in first autumn*.—Above plain olive-green, including pileum and hindneck; superciliary streak, eyelids, sides of head, chin, throat, chest, sides, and flanks pale yellowish olive-green; abdomen, anal region, under tail-coverts and under wing-coverts white.

*Young female in first autumn*.—Similar to the young autumnal

<sup>1</sup> Five specimens.

male, but superciliary streak, sides of head, throat, chest, sides, and flanks bright olive-yellow.

Eastern North America, breeding from northeastern New York (Lewis County), Massachusetts (Graylock Mountain, at 3,000 feet; Springfield), Province of Quebec (Point de Monts), western Ontario (north shore of Lake Superior), Manitoba, eastern Colorado (Colorado Springs), etc., northward to Slave Lake district (Fort Rae; Fort Simpson; Fort Resolution), Alaska (Caribou Crossing), and eastern British Columbia (Caribou); southward in winter over more southern United States (east of Rocky Mountains) to Cuba and Grand Cayman (Bahamas also?), and through eastern Mexico and Central America to Colombia and Venezuela; accidental in southern California (Pasadena, Los Angeles County, September).

*Sylvia peregrina* WILSON, Am. Orn., iv, 1811, 83, pl. 25, fig. 2.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 196; Ann. Lyc. N. Y., ii, 1826, 87, 439.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 412.—AUDUBON, Orn. Biog., ii, 1834, 307, pl. 154.

*Sylvicola* (*Vermivora*) *peregrina* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 221.

*Vermivora peregrina* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, pl. 42, lower fig.—JARDINE, ed. Wilson's Am. Orn., i, 1832, 372.—BONAPARTE, Geog. and Comp. List, 1838, 21.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 469.

*Sylvicola peregrina* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 171.

*Helinaia peregrina* AUDUBON, Synopsis, 1839, 68; Birds Am., oct. ed., ii, 1841, 96, pl. 110.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).

*M[niotilta] peregrina* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *peregrina* GRAY, Hand-list, i, 1869, 239, no. 3456.

[*Helmitheros*] *peregrina* BONAPARTE, Consp. Av., i, 1850, 315.

[*Helminthophaga*] *peregrina* CABANIS, Mus. Hein., i, 1850, 20; Journ. für Orn., 1861, 85 (Costa Rica).—RIDGWAY, Ibis, 1876, 169 (diagnosis).

*Helminthophaga peregrina* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 258; Cat. N. Am. Birds, 1859, no. 185; Review Am. Birds, 1865, 178.—SCLATER, Proc. Zool. Soc. Lond., 1859, 373 (Oaxaca); Cat. Am. Birds, 1862, 29 (Jalapa, Vera Cruz; Lanquin, Vera Paz, Guatemala).—SALVIN and SCLATER, Ibis, 1860, 31 (Coban, Guatemala).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Lion Hill, Panama R. R.); 1870, 836 (San Pedro, Honduras); 1879, 494 (Concordia, prov. Antioquia, Colombia).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba); 1862, 177 (do.); 1872, 412; Repert. Fisico-Nat. Cuba, i, 1865, 232 (Cuba).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Lion Hill, Panama R. R.); viii, 1865, 174 (David, Chiriqui); ix, 1868, 94 (San José and Grecia, Costa Rica).—BLAKISTON, Ibis, 1862, 4 (Saskatchewan); 1863, 62 (interior British North America).—SALVIN, Proc. Zool. Soc. Lond., 1867, 135 (David, Chiriqui); 1870, 182 (Calovevora, Veragua, and Volcan de Chiriqui), 836 (Honduras)—FRANTZIUS, Journ. für Orn., 1869, 293 (Dota mts., Costa Rica).—WYATT, Ibis, 1871, 322 (Herradura, Colombia).—COUES, Check List, 1873, no. 69; 2d ed., 1882, no. 109; Birds N. W., 1874, 53; Birds Col. Val., 1878, 230.—HERRICK, Bull. Essex Inst., v, 1873, 30 (Grand Menan).—RIDGWAY, Bull. Essex Inst., v, 1873, 180 (El Paso Co., Colorado); Ibis, 1876, 171; Nom. N. Am. Birds, 1881, no. 87.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 205, pl. 11, figs. 10, 11; iii, 1874, 504 (El Paso Co., Colorado,



- Sept. 1).—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (n. New England, breeding).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Santa Fé-genia, Oaxaca, Dec., Jan.).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (San José, Costa Rica, Jan., Mar.).—MERRIAM, Bull. Nutt. Orn. Club, iii, 1878, 53 (Lewis Co., New York, May); vi, 1881, 227 (Lewis Co., New York, breeding); vii, 1882, 234 (Point de Monts, prov. Quebec, breeding).—MINOT, Bull. Nutt. Orn. Club, v, 1880, 226 (Boulder, Colorado, May 31).—SALVIN and GODMAN, Ibis, 1880, 117 (Minca, Colombia, 2,000 feet alt.), Biol. Contr.-Am., Aves, i, 1880, 117.
- [*Helminthophaga*] *peregrina* COUES, Key N. Am. Birds, 1872, 95.—SALVIN and SALVIN, Nouv. Av. Neotr., 1873, 8.—CORY, List Birds W. I., 1885, 7 (Cuba).
- Helminthophila peregrina* RINGWAS, Bull. Nutt. Orn. Club, vii, Jan., 1882, 54, Orn. Illinois, i, 1880, 130. BREWSTER, Proc. Bost. Soc. N. H., xxii, 1883, 470 (Anticosti I., July 1).—TURNER, Proc. U. S. Nat. Mus., viii, 1885, 247 (Fort Bay, Labrador).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 239, 639 (Bogotá, Minca, and Concordia, Colombia, Caracas, Venezuela, Fort Simpson, Arctic Am., etc.).—CORY, Auk, ii, 1886, 28 (Cuba, Bahamas?), Birds W. I., 1880, 42; Cat. W. I. Birds, 1892, 117 (Cuba, Grand Cayman).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 647.—LLOYD, Auk, iv, 1887, 296 (Tom Green Co., Texas, fall migr.).—COOKE, Bird Migr. Misc. Vol., 1888, 243 (Mississippi Valley localities and dates).—BULL. 44, Col. Agr. Coll., 1898, 168 (Colorado Springs, Colorado, breeding).—FAXON, Auk, vi, 1889, 102 (Graylock Mt., Massachusetts, breeding at 3,000 ft.).—DUNCAN, Auk, vi, 1889, 138 (Long I., New York, Sept.).—SCOTT, Auk, vii, 1890, 18 (Punta Rasa, Tarpon Springs, and Key West, Florida, migr.).—CHERRIE, Auk, vii, 1890, 335 (San José, Costa Rica, Sept. to Mar.).—viii, 1891, 278, do. —THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 617 (Manitoba, breeding).—NUTTING, Bull. Labr. N. H. State Univ. Iowa, ii, 1893, 277 (Grand Rapids, Saskatchewan, breeding?).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484 (Rio Escondido, Nicaragua, Oct. 24-29).—NEHRING, Our Native Birds, etc., i, 1893, 191.—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 143 (Santa Marta, Colombia).—GRINNEL, Pub. ii, Pasadena Ac. Sci., 1898, 45 (Pasadena, Los Angeles Co., California, 1 spec., Sept. 27, 1897).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 178 (Bonda, etc., prov. Santa Marta, Colombia, Nov. 3 to Apr. 4).—BISHOP, N. Am. Fauna, no. 19, 1900, 89 (Caribou Crossing, Alaska, June 25, 27).—NORRIS, Auk, xix, 1902, 88 (Carpenter Mt., Caribou, British Columbia, breeding; descr. nest and eggs).
- [*Helminthophila*] *peregrina* COUES, Key N. Am. Birds, 2d ed., 1884, 295.—RINGWAS, Man. N. Am. Birds, 1887, 488.
- Sylvia tennessae* BONATERRE and VIEILLIOT, Enc. Méth., ii, 1823, 452.
- [*glycolis*] *missouriensis* MAXIMILIAN, Journ. fur Orn., vi, March, 1858, 117 (Missouri).

### HELMINTHOPHILA CELATA CELATA (Say).

#### ORANGE-CROWNED WARBLER.

*Adult male*.—Above plain grayish olive-green, becoming brighter, more yellowish olive-green, on rump and upper tail-coverts; crown tawny or tawny-ochraceous, this color mostly concealed (except in worn midsummer plumage) by grayish olive tips to the feathers; a narrow superciliary stripe, eyelids, and general color of under parts pale olive-yellowish, becoming paler (sometimes whitish) on lower

portion of abdomen; auricular region, sides of neck, and sides of breast light grayish olive-green, the chest (sometimes throat also) indistinctly streaked with the same; an indistinct triangular spot or streak of dusky in front of eye and a still less distinct short postocular streak; under tail-coverts, axillars, and under wing-coverts pale yellow (intermediate between straw yellow and sulphur yellow); maxilla dusky horn color, mandible paler, more grayish; iris brown; legs and feet brownish horn color (in dried skins); length (skins), 107.9–121.9 (117.3); wing, 60.7–63.2 (62.2); tail, 48.8–52.6 (50); exposed culmen, 9.4–10.4 (9.6); tarsus, 17.3–18.5 (17.8).<sup>1</sup> (In fall and winter the plumage softer, the tawny-ochraceous crown-patch quite concealed, and the sides of head more tinged with gray.)

*Adult female*.—Similar to the adult male in coloration, and not always distinguishable (?); but usually the colors slightly duller, with the tawny-ochraceous crown-patch more restricted, sometimes obsolete; length (skins), 110.5–118.1 (114.3); wing, 57.4–59.2 (58.4); tail, 45.2–49.3 (47.7); exposed culmen, 9.4–10.7 (10.2); tarsus, 17.5–18.5 (17.8).<sup>2</sup>

*Young, first plumage*.—Above dull olive, or grayish olive, becoming more olive-greenish or russet-olive, on rump and upper tail-coverts; middle and greater wing-coverts tipped, more or less distinctly, with paler olive or dull buffy; throat, chest, sides of breast, sides and flanks pale brownish gray, tinged with dull buffy, especially on chest; abdomen white; otherwise like adults, but without trace of tawny-ochraceous on crown.

[Some autumnal specimens, perhaps younger birds, have the head and neck much tinged with gray, the superciliary streak and eyelids

<sup>1</sup> Seven specimens.

<sup>2</sup> Five specimens.

Specimens from the Atlantic coast district of the United States apparently average rather larger than those from the Mississippi Valley and Rocky Mountain district, though the series measured are much too small to show whether such difference really exists or not. There certainly are no color differences, that I can find, between the two series (embracing seven specimens from the Atlantic States and many times that number from western and northern localities). Unfortunately absence of sex determination reduces very much the number of specimens available for measurement. The averages of those measured are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.
<b>MALES.</b>				
Six adult males from Alaska, Rocky Mountain district, etc . . . . .	62.2	49.5	9.6	17.5
One adult male from Florida . . . . .	63.2	52.6	10.4	18.5
<b>FEMALES.</b>				
Two adult females from Alaska and Arizona . . . . .	58.2	46.	9.4	17.5
Three adult females from Florida and South Carolina . . . . .	58.7	48.8	10.4	18.

being white instead of yellowish. More rarely there is very little of yellow tinge on under parts or of olive-green on upper parts, the coloration being olive-grayish above and dull grayish white, obsoletely streaked with pale gray anteriorly, below.]

Alaska (except coast district from Kadiak eastward and southward) and throughout Rocky Mountain district of British America and United States, breeding southward to Manitoba and high mountains of New Mexico; during migration, southward to eastern and central Mexico (as far as States of Vera Cruz, San Luis Potosi, Guanajuato, etc.), and eastward over Mississippi Valley and Gulf States to South Carolina, Georgia, and Florida; occasional during migration in New England and Middle Atlantic States (numerous records), and in southern California (Los Angeles County, September and October).

*Sylvia celata* SAY, Long's Exped. Rocky Mts., i, 1823, 169 (Council Bluffs, Iowa — BONAPARTE, Amer. Orn., i, 1825, 45, pl. 5, fig. 2; Ann. Lyc. N. Y., ii, 1826, 88 — NUTTALL, Man. Orn. U. S. and Can., i, 1832, 413. — AUDUBON, Orn. Biog., ii, 1834, 449, pl. 178. — PEABODY, Rep. Orn. Mass., 1839, 13 (Massachusetts). — TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, 153, part (Columbia R.).

*Sylvia celata* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 171.

*Vermivora celata* JARDINE, ed. Wilson's Am. Orn., iii, 1832, 332 — BONAPARTE, Geog. and Comp. List, 1838, 21 — NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 473. HOY, Proc. Acad. Nat. Sci. Phila., vi, 1853, 312 (Wisconsin).

*Helminia celata* AUDUBON, Synopsis, 1839, 69, Birds Am., oct. ed., ii, 1841, 100, p. 112. — PRATTEN, Trans. Ills. Agric. Soc., i, 1855, 602, Illinois.

*M[niotilta] celata* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *celata* GRAY, Hand-list, i, 1869, 239, no. 3457.

[*Helminthorax*] *celata* BONAPARTE, Consp. Av., i, 1850, 315.

*Helminthorax celatus* SCLATER, Proc. Zool. Soc. Lond., 1857, 212 (Orizaba, Vera Cruz).

*Helminthophaga celata* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 257, part, Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 10 (Brownsville, Texas, Tamaulipas); Cat. N. Am. Birds, 1859, no. 184, part, Review Am. Birds, 1865, 163, 176, part (Fort Yukon; Fort Resolution, Fort Simpson; Georgia, etc.). — SCLATER, Cat. Am. Birds, 1862, 29 (Orizaba). — BLAKISTON, Ides, 1862, 4 (Saskatchewan); v, 1863, 62 (interior British North America). — ALLEN, Proc. Essex Inst., iv, 1864, 60 (Massachusetts), Bull. Mus. Comp. Zool., ii, 1871, 268 (e. Florida, winter); iii, 1872, 175 (Kansas; Utah). — COLES, Proc. Bost. Soc. N. H., xii, 1868, 108 (South Carolina); Check List, 1873, no. 68; 2d ed., 1882, no. 107. — SEMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 346 (Orizaba, winter). — DALL and BANNISTER, Trans. Chicago Acad. Sci., i, 1869, 278 (Fort Yukon, etc., Alaska, breeding). — COOPER, Orn. Cal., 1870, 83, part. — MAYNARD, Birds Florida, 1873, 61. — RIDGWAY, Bull. Essex Inst., vii, 1875, 32 (Wasatch Mts., Utah, breeding); Ibis, 1876, 170; Nom. N. Am. Birds, 1881, no. 86. — BREWSTER, Bull. Nutt. Orn. Club, i, 1876, 94 (Concord, Massachusetts, Oct. 2). — PURDIE, Bull. Nutt. Orn. Club, ii, 1877, 21 (Cranston, Rhode Island, Dec.). — MEARNS, Bull. Nutt. Orn. Club, iii, 1878, 46 (West Point, New York, May 13). — BROWN, Bull. Nutt. Orn. Club, iii, 1878, 173 (Cocacada, Alabama, Feb. 12 and Apr. 15). — BREWER, Proc. Bost. Soc. N. H., xix, 1878, 302 (Hollis, New Hampshire; Concord, Massachusetts, Oct. 2, 1876). — BICKNELL, Bull. Nutt. Orn. Club, iv, 1879, 61 (Riverdale, New York, Oct.). — TAUNTER,



- Bull. Nutt. Orn. Club, iv, 1879, 235 (Philadelphia, Pennsylvania, Mar.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 116, part (Cinco Señores, Mexico, etc.).—NELSON, Cruise "Corwin," 1881 (1883), 63 (Norton Sound and interior n. Alaska); Rep. Nat. Hist. Coll. Alaska, 1887, 200.—McLENNAN, Cruise "Corwin," 1884, 114 (Kowak R., Alaska, breeding).
- [*Helminthophaga*] *celata* COUES, Key N. Am. Birds, 1872, 95.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.
- Helminthophaga celata*, var. *celata* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 202.
- Helminthophaga celata* . . . var. BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, pl. 11, figs. 5, 6.
- [*Helminthophaga celata*] a. *celata* COUES, Birds N.W., 1874, 52; Birds Col. Val., 1878, 226.
- [*Helminthophaga celata*.]  $\alpha$ . *celata* RIDGWAY, Ibis, 1876, 169, 170; Orn. 40th Parallel, 1877, 429 (upper Humboldt Valley, Nevada, Sept.; Parleys Park, Utah, breeding.)
- Helminthophaga celata celata* GOODE, Bull. U. S. Nat. Mus., no. 20, 1883, 323.
- Helminthophila celata* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan., 1882, 54; Proc. U. S. Nat. Mus., v, 1883, 535 (La Paz, Lower California, 1 spec., Jan.); Orn. Illinois, i, 1889, 129.—RHOADS, Bull. Nutt. Orn. Club, viii, 1883, 179 (Haddonfield, New Jersey, 1 spec., Mar. 22).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 244.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 646.—WAYNE, Auk, iii, 1886, 139 (coast of South Carolina, Nov. to Mar.); xii, 1895, 365 (Wacissa and Aucilla rivers, n. w. Florida).—BREWSTER, Auk, iii, 1886, 278 (Belmont, Massachusetts).—ALLEN, Bull. Am. Mus. N. H., i, 1886, 256 (Springfield, Massachusetts, May 15, 1883; Lynn, Jan. 1, 1875; Concord, Oct. 2, 1876).—GREEN, Auk, iv, 1887, 350 (Syracuse, New York, Oct. 2).—CHAPMAN, Auk, v, 1888, 275 (Gainesville, Florida, winter).—TREAT, Auk, v, 1888, 323 (East Hartford, Connecticut, May 8).—COOKE, Bird Migr. Miss. Val., 1888, 242 (Mississippi Valley localities and dates).—SCOTT, Auk, vii, 1890, 18 (Key West, Florida, common Sept. 8 to Oct. 5).—FISHER, Auk, vii, 1890, 96 (Washington, D. C., Oct. 13).—WINTLE, Auk, vii, 1890, 290 (Montreal, Canada, May 21).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 616 (Manitoba, breeding).—MACFARLANE, Proc. U. S. Nat. Mus., xiv, 1891, 444 (Anderson R., Arctic Am., breeding).—McCORMICK, Auk, ix, 1892, 397 (Oberlin, Ohio, May 11).—HOWELL, Auk, x, 1893, 90 (Flatbush, Long Island, Oct. 12).—LOOMIS, Auk, x, 1893, 154 (South Carolina).—JOY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (Soledad, San Luis Potosi).—McILWRAITH, Birds Ontario, 1894, 357 (Hamilton, May 11, 1886; London; Milton).—BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 112 (Louisiana, common winter resid.).—SWARTH, Condor, iii, 1901, 145 (Los Angeles, California, Sept. 28 and Oct. 14, 1891).
- [*Helminthophila*] *celata* COUES, Key N. Am. Birds, 2d ed., 1884, 295.—RIDGWAY, Man. N. Am. Birds, 1887, 488.
- Helminthophila celata* NEHRLING, Our Native Birds, etc., i, 1893, 191.
- [*Helminthophaga celata*.] var. *obscura* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 192, pl. 11, fig. 6 (Enterprise, Florida; coll. U. S. Nat. Mus.).
- Helminthophila celata obscura* BREWSTER, Bull. Nutt. Orn. Club, viii, July, 1883, 157 (Georgia and Florida in winter; crit.).
- [*Helminthophila celata*.] Subsp.  $\alpha$ . *Helminthophila obscura* SHARPE, Cat. Birds Brit. Mus., x, 1885, 246.

## HELMINTHOPHILA CELATA LUTESCENS Ridgway.

## LUTESCENT WARBLER.

Similar to *H. c. celata*, but much more brightly colored, the upper parts bright olive-green, the under parts distinctly yellow (bright olive-yellow to nearly gamboge); young very different from that of *H. c. celata*.

*Young in first plumage*.—Above plain olive-green, the middle and greater wing-coverts more or less distinctly tipped with paler or with buffy; under parts buffy olive-yellow or straw yellow, more or less strongly shaded with olive on chest, sides, and flanks (often on throat also).

*Adult male*.—Length (skins), 106.7–113 (109.7); wing, 58.2–61.2 (59.9); tail, 44.7–49 (47); exposed culmen, 9.4–9.6 (9.4); tarsus, 17.5–18.3 (18).<sup>1</sup>

*Adult female*.—Length (skins), 101.6–111.8 (108.4); wing, 56.9–61 (58.9); tail, 45.7–47 (46.2); exposed culmen, 9.9–10.2 (10); tarsus, 17.3–17.8 (17.5).<sup>2</sup>

Breeding in Pacific coast district, from mountains of southern California (Los Angeles Co.) to island of Kadiak and shores of Cook Inlet, Alaska, and eastward to Ruby Mountains, Nevada; eastward and southward during migration to Montana (Columbia Falls), Wyoming (Fort Bridger), Colorado, Arizona, and Cape St. Lucas, and through western Mexico to Guatemala (Chimay).

*Sylvia celata* (not of Say, 1823) TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, 153, part (Columbia R.).

*Sylvicola celata* (not of Richardson, 1837) FINSCH, Abh. Nat. Bremen, iii, 1872, 36 (Sitka, Alaska).

*Vermivora celata* (not of Bonaparte, 1838) GAMBEL, Proc. Ac. Nat. Sci. Phila., iii,

*Helminthophaga celata* var. *lutescens* RIDGWAY, Am. Journ. Sci. and Arts., 3d ser., iv, Dec., 1872, 457 (type from Kadiak, Alaska; coll. U. S. Nat. Mus.); Am. Nat., vii, Oct., 1873, 5 (description; Kadiak, Alaska; coll. U. S. Nat. Mus.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 204, pl. 11, fig. 4.—BENDIRE, Proc. Bost. Soc. N. H., 1877, 113 (descr. eggs).

[*Helminthophaga celata*] b. *lutescens* COUES, Birds N. W., 1874, 52; Birds Col. Val., 1878, 227.

*Helminthophaga celata* . . . var. *lutescens* COUES, Check List, 1873, 125 (Appendix), no. 68a.

*Helminthophaga celata lutescens* RIDGWAY, Bull. Essex Inst., vii, Jan., 1875, 19 (West Humboldt Mts., Nevada), 22 (East Humboldt Mts.); Nom. N. Am. Birds, 1881, no. 86a.—BREWSTER, Bull. Nutt. Orn. Club, iv, 1879, 34 (descr. young).—COUES, Check List, 2d ed., 1882, no. 108.—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 201.

*H[elminthophaga] celata lutescens* RIDGWAY, Bull. Essex Inst., vii, 1875, 22 (East Humboldt Mts., Nevada, Sept.).

[*Helminthophaga celata*.]  $\beta$ . *lutescens* RIDGWAY, Ibis, Apr., 1876, 169, 171; Orn. 40th Parallel, 1877, 429 (West Humboldt Mts., Nevada, Sept.; East Humboldt Mts., Sept.).

*Helminthophaga celata*,  $\beta$ . *lutescens* RIDGWAY, Bull. Nutt. Orn. Club, iii, Apr., 1878, 65 (Calaveras Co., California, resident); Proc. U. S. Nat. Mus., i, 1879, 404 (centr. California).

*Helminthophila celata lutescens* BREWSTER, Bull. Nutt. Orn. Club, vii, Apr., 1882, 85 (Tucson, Arizona, Apr. 26).—BELDING, Proc. U. S. Nat. Mus., vi, 1883, 347 (Victoria Mts., Lower California), 526 (La Paz, Lower California); Land Birds Pacific Distr., 1890, 206, part (breeding at Santa Cruz and Orema, Santa Cruz Co., California; also at Oakland, Berkeley, Alameda Springs, Haywards, and Sebastopol).—ANTHONY, Auk, iii, 1886, 170 (Washington Co., Oregon, breeding; habits).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 646a.—SCOTT, Auk, v, 1888, 34 (Catalina Mts., Arizona, fall migrant).—TOWNSEND, Proc. U. S. Nat. Mus., xiii, 1890, 137 (Cape St. Lucas, Lower California, Apr. 7).—LAWRENCE (R. H.), Auk, ix, 1892, 46 (Grays Harbor, Washington, breeding).—ANTHONY, Auk, xii, 1895, 142 (San Fernando, Lower California, Apr. and early May).—GRINNELL, Auk, xv, 1898, 129 (Sitka, Alaska, breeding); Pub., ii, Pasadena Ac. Sci., 1898, 44 (Los Angeles Co., California, breeding in mountains up to 6,000 ft.).—MERRILL, Auk, xv, 1898, 18 (Fort Sherman, Idaho, May).—KOBÉ, Auk, xvii, 1900, 356 (Cape Disappointment, Washington, breeding).—OSGOOD, N. Am. Fauna, no. 21, 1901, 79 (Fort Kenai, Alaska, May).—MAILLARD, Condor, iii, 1901, 126 (San Benito Co., California, breeding).

*H[elminthophila] celata lutescens* RIDGWAY, Man. N. Am. Birds, 1887, 489.

*H[elminthophila] c[elata] lutescens* COUES, Key N. Am. Birds, 2d ed.; 1884, 295.

*Helminthophila lutescens* RIDGWAY, Proc. U. S. Nat. Mus., i, Mar. 20, 1879, 391 (Calaveras Co., California).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 246.

#### HELMINTHOPHILA CELATA SORDIDA Townsend.

##### DUSKY WARBLER.

Similar to *H. celata lutescens*, but decidedly darker; bill and feet larger, wing shorter, and tail longer.

*Adult male*.—Length (skins), 110.5–119.4 (116.8); wing, 57.7–59.9 (59.2); tail, 49.3–50 (49.8); exposed culmen, 10.6–11.9 (11.4); tarsus, 18–18.8 (18.3).<sup>1</sup>

<sup>1</sup> Five specimens,

*Adult female*.—Length (skins), 116.8–119.4 (118.1); wing, 56.6–57.4 (56.9); tail, 49–50 (49.5); exposed culmen, 10.4; tarsus, 18.5–18.8.<sup>1</sup>

Santa Barbara Islands, California (San Clemente, Santa Cruz, Santa Rosa, and Santa Catalina islands); occasional on mainland (Pasadena, Los Angeles County, February and August).

*Helminthophila celata lutescens* (not of Ridgway) BLAKE, Auk, iv, 1887, 330 (Santa Cruz I., California) BELDING, Land Birds Pacific Distr., 1890, 206, part (Santa Cruz I., breeding).

*Helminthophila celata sarbula* TOWNSEND, Proc. U. S. Nat. Mus., xiii, no. 720, Sept. 9, 1890, 139 (San Clemente I., California, coll. U. S. Nat. Mus., 141 Santa Cruz and Santa Rosa islands). AMERICAN ORNITHOLOGISTS' UNION, Check List, 2d ed., 1895, no. 646b RIDGWAY, Man N. Am. Birds, 2d ed., 1896, 607 — GRINNELL, Rep. Birds Santa Barbara Is., etc., 1897, 20 (San Clemente I., Pub., 11, Pasadena Ac. Sci., 1898, 44 (Pasadena, Los Angeles Co., California, middle of July to Feb. 29); Auk, xv, 1898, 236 (Santa Catalina I., Dec.

#### HELMINTHOPHILA RUBRICAPILLA RUBRICAPILLA (Wilson).

##### NASHVILLE WARBLER.

*Adult male*.—Pileum, hindneck, auricular region and sides of neck plain gray; crown chestnut, the feathers tipped with gray; rest of upper parts plain olive-green, brightest on rump and upper tail-coverts; lores pale grayish or grayish white; a conspicuous white orbital ring; malar region and under parts bright gamboge yellow, becoming white on lower abdomen and anal region, tinged with olive on sides and flanks, especially the latter; maxilla brownish black, mandible paler, more grayish brown (in dried skins); iris brown; legs and feet horn color (in dried skins); length (skins), 102.9–116.8 (106.9); wing, 56.4–61 (59.2); tail, 41.7–45.7 (43.9); exposed culmen, 9.4–9.6 (9.5); tarsus, 16.8–17.3 (17).<sup>2</sup>

*Adult female*.—Similar to the adult male, but duller in color, and with little, if any, chestnut on crown; length (skins), 97.8–105.4 (102.9); wing, 54.6–58.9 (56.6); tail, 40.1–42.7 (41.4); exposed culmen, 9.1–9.6 (9.4); tarsus, 16.8–17.8 (17.3).<sup>2</sup>

*Young in first autumn*.—Much duller in color than adults; gray of head and neck replaced by brownish gray or grayish brown; olive-green of back duller; yellow of under parts duller, becoming brownish white on chin and malar region.

Eastern North America, breeding from Massachusetts, Connecticut, northern New Jersey (Englewood), Pennsylvania (Dingmans Ferry, Pike County), northern Illinois, Nebraska (Nebraska City), etc., northward to Grand Menan and the Great Slave Lake district; southward in migration over more southern United States (east of Rocky Mountains) through eastern Mexico to Guatemala; accidental in southern Greenland (two records: Gothaab, about 1835, and Fiskeneset, Aug. 31, 1840).

<sup>1</sup>Two specimens.

<sup>2</sup>Ten specimens.

<sup>3</sup>Six specimens.

*Sylvia ruficapilla* (not of Latham, 1790) WILSON, Am. Orn., iii, 1811, 120, pl. 27, fig. 3.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 197.—AUDUBON, Orn. Biog., i, 1831, 450, pl. 89.

*M[niotilla] ruficapilla* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *ruficapilla* GRAY, Hand-list, i, 1869, 239, no. 3456.

*Helminthophaga ruficapilla* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 256; Cat. N. Am. Birds, 1859, no. 183, part; Review Am. Birds, 1865, 175, part.—(?)SCLATER, Proc. Zool. Soc. Lond., 1858, 298 (La Parada, Oaxaca); 1859, 373 (Oaxaca, Feb.); Cat. Am. Birds, 1862, 29.—BLAKISTON, Ibis, 1863, 62 (Great Slave Lake).—ALLEN, Proc. Essex Inst., iv, 1864, 59 (Massachusetts, breeding); Bull. Mus. Comp. Zool., ii, 1871, 269 (e. Florida, Mar.); iii, 1872, 175, part (Kansas).—(?)DRESSER, Ibis, 1865, 477 (San Antonio, Texas).—MCILWRAITH, Proc. Essex Inst., v, 1866, 85 (Hamilton, Ontario).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 546 (Orizaba, Vera Cruz, winter).—COUES, Check List, 1873, no. 67, part; 2d ed., 1882, no. 106, part; Birds N. W., 1874, 50, part; Birds Col. Val., 1878, 224, part.—HERRICK, Bull. Essex Inst., v, 1873, 30 (Grand Menan).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 196, part, pl. 11, fig. 7.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (New England, summer resid.).—NEWTON, Man. N. H. Greenland, 1875, 99 (Gothaab, 1835, and Fiskensæset, Aug. 31, 1840).—(?)LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Santa Efigenia, Oaxaca, Dec., Jan.).—RIDGWAY, Ibis, 1876, 170, part; Nom. N. Am. Birds, 1881, no. 85, part.—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 12 (near Hidalgo, Texas); v, 1879, 386 (Lometa, Texas, Apr. 11 to 26).—MERRILL, Proc. U. S. Nat. Mus., i, 1878, 123 (Fort Brown, Texas, Apr.).—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 57 (descr. young).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 115, part.—(?)SALVIN, Cat. Strickland Coll., 1882, 89 (Guatemala).

[*Helminthophaga*] *ruficapilla* COUES, Key N. Am. Birds, 1872, 95.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.

*H[elminthophaga] ruficapilla* RIDGWAY, Ibis, 1876, 168 (diagnosis).

[*Helminthophaga ruficapilla*] var. *ruficapilla* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 191, in text.

*Helminthophila ruficapilla* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan., 1882, 54; Orn. Illinois, i, 1889, 128.—BREWSTER, Proc. Bost. Soc. N. H., xxii, 1883, 370 (Gaspé Bay, Gulf St. Lawrence, July 15).—BICKNELL, Auk, i, 1884, 211 (song).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 242, 640, part.—RALPH, Trans. Oneida Hist. Soc., iii, 1886, 137 (Oneida Co., New York, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 645.—COOKE, Bird Migr. Miss. Val., 1888, 241 (Mississippi Valley localities and dates; breeding from n. Illinois and Nebraska northward).—CHAPMAN, Auk, vi, 1889, 198, 304 (Englewood, New Jersey, breeding).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 616 (Manitoba, breeding).—WHITE, Auk, x, 1893, 227 (Mackinac I., Michigan, rare summer resid.).—CONGDON, Auk, xii, 1895, 190 (Dingmans Ferry, Pike Co., Pennsylvania, breeding).—BRUNER, Proc. Nebr. Orn. Un., 2d an. meet., 1901, 57 (Nebraska City, Nebraska, breeding).

*H[elminthophila ruficapilla]* COUES, Key N. Am. Birds, 2d ed., 1884, 294.—RIDGWAY, Man. N. Am. Birds, 1887, 489.

*Helminthophila ruficapilla* NEHRLING, Our Native Birds, etc., i, 1893, 189.

*Sylvia rubricapilla* WILSON, Am. Orn., vi, 1812, 15 (index).—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 197; Ann. Lyc. N. Y., ii, 1826, 7.—AUDUBON, Orn. Biog., i, 1831, 450, pl. 89.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 412.

*Sylvia (Vermivora) rubricapilla* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 220.

- Vermicora rubricapilla* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, pl. 42, upper fig.—JARDINE, ed. Wilson's Am. Orn., i, 1832, 407.—BONAPARTE, Geog. and Comp. List, 1838, 21.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 472.—REINHARDT, Vid. Med. Nat. Forh., 1854, 82 (Greenland).—BREWER, Proc. Bost. Soc., vi, 1856, 4 (descr. nest and eggs).
- Sylvicola rubricapilla* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 171.
- Helinaia rubricapilla* AUDUBON, Synopsis, 1839, 70; Birds Am., oct. ed., ii, 1841, 103, pl. 113.
- [*Helminthos*] *rubricapilla* BONAPARTE, Consp. Av., i, 1850, 315.
- Helminthos rubricapillus* SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Cordova, Vera Cruz).
- H[elminthophaga] rubricapilla* CABANIS, Mus. Hein., i, 1850, 20.—SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz).
- Mniotilta rubricapilla* REINHARDT, Ibis, 1861, 6 (Gotthaab and Fiskeneeset, Greenland, 2 specimens).
- Helminthophila rubricapilla* FAXON, Auk, xiii, July 1896, 263.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xiv, 1897, 130.
- Sylvia leucogastra* STEPHENS, Shaw's Gen. Zool., x, 1817, 622 (based on *Sylvia ruficapilla* Wilson).
- Sylvia nashvillei* BONNATERRE and VIEILLOT, Enc. Méth., ii, 1823, 451.
- [*Helminthophaga ruficapilla*.] var. *ocularis* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 191 (Chicago, Illinois; coll. U. S. Nat. Mus.).

#### HELMINTHOPHILA RUBRICAPILLA GUTTURALIS (Ridgway).

##### CALAVERAS WARBLER.

Similar to *H. r. rubricapilla*, but olive-green of rump and upper tail-coverts brighter, more yellowish, yellow of under parts brighter, lower abdomen more extensively whitish, and greater wing-coverts lighter, more yellowish olive-green.<sup>1</sup>

*Adult male*.—Length (skins), 182.0, 190.6 (173.2); wing, 58.0, 62.5.

*Helminthophaga ruficapilla* (not *Sylvia ruficapilla* Wilson) BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 923 (Fort Tejon, California); Cat. N. Am. Birds, 1859, no. 183, part; Review Am. Birds, 1865, 175, part.—XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 141 (Fort Tejon).—(?) SCLATER, Proc. Zool. Soc. Lond., 1858, 298 (La Parada, Oaxaca); 1859, 373 (Oaxaca); Cat. N. Am. Birds, 1862, 29.—(?) DRESSER, Ibis, 1865, 477 (San Antonio, Texas).—COOPER, Orn. Cal., 1870, 82.—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 175, part (Utah).—COUES, Check List, 1873, no. 67, part; 2d ed., 1882, no. 106, part; Birds N.W., 1874, 50, part; Birds Col. Val., 1878, 224, part.—RIDGWAY, Bull. Essex Inst., v, 1873, 177 (Colorado; Utah; Nevada); vii, 1875, 21 (e. Humboldt Mts., Nevada); Ibis, 1876, 170, part; Orn. 40th Parallel, 1877, 427 (East Humboldt Mts., Sept.); Bull. Nutt. Orn. Club, iii, 1878, 65 (Calaveras Co., California, breeding); Nom. N. Am. Birds, 1881, no. 85 part.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 191, part, pl. 11, fig. 8.—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 41; Zool. Exp. W. 100th Merid., 1875, 188 (Camp Crittenden, Arizona, Aug. 27 to Sept. 1).—NELSON, Proc. Bost. Soc. N. H., xvii, 1875, 439 (California).—(?) LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Santa Efigenia, Oaxaca, Dec., Jan.).—BELDING, Proc. U. S. Nat. Mus., i, 1879, 404 (Calaveras Co., California, breeding).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 115, part.

[*Helminthophaga*] *ruficapilla* COUES, Key N. Am. Birds, 1872, 95, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.

*Helminthophaga* *ruficapilla* RIDGWAY, Ibis, 1876, 168, part.

*Helminthophila ruficapilla* SHARPE, Cat. Birds Brit. Mus., x, 1885, 242, 640, part (Presidio, near Mazatlan; Ciudad Durango).

*Helminthophaga ruficapilla* . . . var. BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, pl. 11, fig. 8 (California).

[*Helminthophaga ruficapilla*.] var. *gutturalis* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 191, in text (East Humboldt Mts., Nevada; coll. U. S. Nat. Mus.).

*Helminthophila ruficapilla gutturalis* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 352.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 645a.—TOWNSEND, Proc. U. S. Nat. Mus., x, 1887, 223 (Baird and Castle Lake, n. California, breeding).—LLOYD, Auk, iv, 1887, 295 (Tom Green and Concho counties, w. Texas, migr.).—SCOTT, Auk, v, 1888, 33 (Catalina Mts., Arizona, Sept.).—MERRILL, Auk, v, 1888, 360 (Fort Klamath, e. Oregon, breeding).—ATTWATER, Auk, ix, 1892, 340 (San Antonio, Texas, migr.).—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 54 (Nelson and Vernon, e. British Columbia).

*Helminthophila rubricapilla gutturalis* FAXON, Auk, xiii, July, 1896, 264, in text.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xiv, 1897, 131.—MERRILL, Auk, xv, 1898, 18 (Fort Sherman, Idaho, breeding).—BROOKS, Auk, xvii, 1900, 107 (Okanogan district, British Columbia).

## HELMINTHOPHILA VIRGINIÆ (Baird).

### VIRGINIA'S WARBLER.

*Adult male in spring and summer.*—Upper parts plain smoke gray, the rump and upper tail-coverts bright yellowish olive-green or olive-yellow; crown chestnut, the feathers tipped with gray (except in worn plumage); a conspicuous white orbital ring; sides of head rather paler gray than upper parts, fading into grayish white on malar region and lores; chest and (usually) throat clear lemon yellow (usually paler



anteriorly); under tail-coverts lemon yellow; under wing-coverts and axillars dull white; rest of under parts dull white medially shading into pale smoke gray laterally; maxilla dusky horn color with paler tomia; mandible paler horn color (more bluish in life); iris brown; legs and feet dusky horn color in dried skins.

*Adult male in autumn and winter.*—Similar to the summer male but strongly tinged with brown above and on flanks, yellow of chest duller, and chestnut crown-patch concealed by very broad brownish gray tips to the feathers.

*Adult female in spring and summer.*—Similar in coloration to the adult male but colors duller, especially the yellowish olive-green of rump and upper tail-coverts; chestnut crown-patch usually more restricted, sometimes nearly obsolete; gray of back, etc., browner; yellow of chest paler and never(?) extended over throat; that of the under tail-coverts also paler.

*Young (♂) female in first autumn.*<sup>1</sup>—Similar to the adult female, but under parts pale buffy or buffy whitish medially, the chest only very faintly, if at all, tinged with yellow.

*Young in first plumage.*—Middle and greater wing-coverts tipped with pale dull buffy, forming two rather distinct bars; chin, throat, chest, and sides of breast pale brownish-gray, the sides and flanks similar, but still paler; median portion of breast and abdomen white; otherwise like autumnal adults or young in first autumn.

*Adult male.*—Length (skins), 103.6–109.2 (106.4); wing, 61–61.5 (61.2); exposed culmen, 8.9–9.9 (9.4); tarsus, 16–17.8 (17).<sup>2</sup>

*Adult female.*—Length (skins), 101.6; wing, 57.4–60.4 (58.9); tail, 45.5–46.7 (46); exposed culmen, 9.4; tarsus, 17.3.<sup>3</sup>

Rocky Mountain district of United States, from Colorado and



- Exped. W. 100th Merid., 1875, 189 (White Mts., Arizona, Aug. 11; Tierra Amarilla, New Mexico, Sept. 15; Navajo Creek, Colorado, Sept. 11).—MINOT, Bull. Nutt. Orn. Club, v, 1880, 226 (Manitou, Colorado; descr. song).  
*[Helminthophaga] virginia* COUES, Key N. Am. Birds, 1872, 94.  
*H[elminthophaga] virginia* RIDGWAY, Ibis, 1876, 168 (diagnosis).  
*[Mniotilta] virginia* GIEBEL, Thesaurus Orn., ii, 1875, 189.  
*Helminthophila virginia* RIDGWAY, Bull. Nutt. Orn. Club, vii, Jan., 1882, 54.—BREWSTER, Bull. Nutt. Orn. Club; viii, 1883, 155 (Colorado Springs, Colorado; remarks on plumage).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 247, 641.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 644.—SCOTT, Auk, v, 1888, 33 (Catalina Mts., Arizona, above 3,500 ft.; breeding?).  
*H[elminthophila] virginia* COUES, Key N. Am. Birds, 2d ed., 1884, 294.—RIDGWAY, Man. N. Am. Birds, 1887, 490.  
*Helminthophila virginia* NEHRLING, Our Native Birds, etc., i, 1893, 188.

### HELMINTHOPHILA CRISSALIS Salvin and Godman.

#### COLIMA WARBLER.

Similar to *H. virginia*, but upper parts brown instead of gray, rump "oleagineous" instead of olive-yellow, under tail-coverts oleagineous chestnut instead of yellow, and under parts gray (without any yellow on chest?).

*Adult female*.—Above oleagineous brown, the lower back and rump clear oleagineous; crown with a partly concealed patch of chestnut; wings and tail fuscous; orbital ring and lores white; beneath dull ash gray, the flanks more brownish, the middle of abdomen whitish, the under tail-coverts clear oleagineous chestnut; under wing-coverts white; bill and feet dusky hazel, the mandible paler basally; length, 127; wing, 63.5; tail, 53.6; bill, from point to rictus, 14; tarsus, 19. (Free translation of original description.)

Southwestern Mexico, in State of Colima (Sierra Nevada.)

*Helminthophila crissalis* SALVIN and GODMAN, Ibis, 6th ser., i, July, 1889, 380 (Sierra Nevada, Colima, Mexico; coll. Salvin and Godman).

### HELMINTHOPHILA LUCIÆ (Cooper).

#### LUCY'S WARBLER.

*Adult male in spring and summer*.—Above plain mouse gray; crown chestnut, the feathers more or less extensively tipped (except in worn plumage) with gray; upper tail-coverts bright chestnut; lores, orbital ring, and entire under parts white, tinged with pale brownish gray laterally, and also tinged more or less strongly with buff, especially on chest; maxilla dusky horn color with paler tomia; mandible paler, more grayish; iris brown; legs and feet dusky (in dried skins).

*Adult male in autumn and winter*.—Similar to the spring and summer plumage, but above tinged with brown, the chestnut crown-patch concealed by very broad brownish gray tips to the feathers; under parts pale brownish buff, becoming white, or nearly so, on abdomen.

*Adult female in spring and summer.*—Similar to the male of corresponding season, and not always distinguishable, but usually with the chestnut crown-patch more restricted (rarely obsolete) and chestnut of both crown-patch and upper tail-coverts lighter or less intense.

*Young, first plumage.*—Essentially like adults, but much clearer white beneath; no trace of chestnut on crown; upper tail-coverts ochraceous-buff instead of chestnut; middle and greater wing-coverts tipped with whitish or pale buffy, producing two rather distinct bars.

*Adult male.*—Length (skins), 91.4–102.9 (98.3);<sup>1</sup> wing, 55.1–58.2 (56.9); tail, 41.1–43.9 (42.9); exposed culmen, 8.4–8.9 (8.4); tarsus, 16–16.5 (16.3).<sup>2</sup>

*Adult female.*—Length (skins), 91.9–95.2 (93.5);<sup>3</sup> wing, 51.6–52.8 (52.1); tail, 37.3–39.9 (38.6); exposed culmen, 7.6–8.9 (8.4); tarsus, 15.5–15.7 (15.5).<sup>4</sup>

Arizona, southwestern Utah (lower Santa Clara Valley), and southward through Sonora and other States of western Mexico to Jalisco (Bolaños; Santana).

*Helminthophaga luciae* COOPER, Proc. Calif. Acad. Sci., July, 1862, 120 (Fort Mojave, Arizona; coll. U. S. Nat. Mus.); Amer. Nat., iii, 1869, 476, 479; Orn. Cal., 1870, 84.—BAIRD, Review Am. Birds, 1865, 178.—COUES, Ibis, 1866, 280 (Fort Whipple, Arizona); Am. Nat., vi, 1872, 493 (Tucson, Arizona; descr. supposed nest and eggs); Check List, 1873, no. 65; 2d ed. 1882, no. 104; Birds Col. Val., 1878, 219.—ELLIOT, Illustr. New and Unfig. N. Am. Birds, i, 1869, pl. 5.—BREWER, Proc. Bost. Soc. N. H., xvii, 1873, 107 (descr. supposed nest and eggs).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 200, pl. 11, fig. 9; iii, 1874, 504 (Tucson, Arizona, breeding).—HENSCHAW, Zool. Exped. W. 100th Merid., 1875, 190 (Camp Lowell, Arizona).—RIDGWAY, Ibis, 1876, 170; Nom. N. Am. Birds, 1881, no. 83.

[*Helminthophaga*] *luciae* COUES, Key N. Am. Birds, 1872, 94.

[*Helminthophaga*] *luciae* COUES, Proc. Bost. Soc. N. H., xvii, 1873, 107.

## Genus OREOTHTLYPIS Ridgway.

*Oreothlypis* RIDGWAY, Auk, i, Apr., 1884, 169, in text. (Type, *Compsothlypis gutturalis* Cabanis.)

Similar to *Helminthophila* but tail relatively longer (difference between length of tail and length of wing decidedly less than length of tarsus), and style of coloration very different.

Bill much shorter than head, narrowly wedge-shaped, very acute, with straight culmen and gonys; moderately compressed, the maxillary tomium without subterminal notch. Nostril longitudinally oval or subcuneate, with broad superior operculum or membrane. Rictal bristles obsolete. Wing rather long, with tip rather rounded (ninth primary shorter than sixth, the eighth, seventh, and sixth longest and nearly equal; wing-tip about equal to tarsus (in *O. superciliosa*) or shorter (in *O. gutturalis*). Tail equal to distance from bend of wing to tips of secondaries and slightly rounded (in *O. gutturalis*) or decidedly longer and emarginate (*O. superciliosa*), the rectrices rather narrow. Tarsus much longer than commissure, a little more than one-fourth as long as wing, its scutella indistinct (sometimes fused on outer side); middle toe, with claw, decidedly shorter than tarsus; basal phalanx of middle toe united for more than half its length to both outer and inner toes (to the outer toe for most of its length in *O. superciliosa*).

*Coloration*.—Gray above, with black patch on back, the throat and chest orange; or gray and olive-green above with broad and conspicuous white superciliary stripe, the throat, chest, and breast yellow, with a spot of chestnut on center of chest.

*Nidification* unknown.

*Range*.—Highlands of Mexico, Guatemala, Costa Rica, and Chiriqui. (Two species.)

This genus is very distinct from *Compsothlypis*, to which the slight resemblance, chiefly of coloration in one species, is purely superficial. Structurally, in the absence of rictal bristles and less amount of adhesion between basal portion of middle and outer toes, and in the longer tail, it comes much nearer to *Helminthophila*, from which it is to be distinguished chiefly by the relatively longer tail and different style of coloration.

The two species referred to *Oreothlypis* differ conspicuously in their coloration and to a considerable extent in structural details, and may possibly be wrongly associated. *O. superciliosa* has the anterior toes considerably more united at the base, the basal phalanx of the middle toe being joined for most of its length to the outer toe and for more than half its length to the inner, while in *O. gutturalis* the fusion extends for about half the distance of the phalanx on each side.

## KEY TO THE SPECIES OF OREOTHLYPIS.

- a. Above bluish gray, with a triangular patch of black on back; chin, throat, chest, and upper breast cadmium orange; no white on side of head. (Highlands of Costa Rica and Chiriqui.).....*Oreothlypis gutturalis* (p. 476)
- aa. Above olive-green, with pileum, hindneck, wings, and tail gray; chin, throat, chest, and upper breast canary yellow, the chest with a central spot of chestnut; a broad white superciliary stripe. (Highlands of Mexico and Guatemala.)  
*Oreothlypis superciliosa* (p. 477)

## OREOTHLYPIS GUTTURALIS (Cabanis).

## IRAZÚ WARBLED.

*Adults (sexes alike).*—Above plain slate-gray, the back with a large triangular patch of black; lores, suborbital region, and anterior portion of malar region black, fading gradually into the slate-gray of the malar region; chin, throat, and chest rich orange or cadmium orange (varying to indian yellow or cadmium yellow, sometimes almost flame scarlet); median portion of breast, abdomen, and under tail-coverts white; sides and flanks light gray (no. 7 or no. 8); bill blackish, with lower basal portion light colored; iris brown; legs and feet (in dried skins) dusky horn color.

*Young female.*<sup>1</sup>—Above dull plumbeous-gray, with a triangular patch of black on the back, as in the adult; chin, throat, and chest pale dingy buff, the feathers grayish white beneath the surface, their bases deeper grayish; rest of under parts whitish medially, grayish laterally.

*Adult male.*—Length (skins), 106–122 (116); wing, 64–67 (65.5); tail, 48–50 (48.7); exposed culmen, 10–12 (10.7); tarsus, 15–19 (17); middle toe, 10–12 (10.7).<sup>2</sup>

*Adult female.*—Length (skins), 100–123 (111); wing, 59–64 (61.5);

"*P[arula] gutturalis* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 208, in text.

[*Mniotilta*] *gutturalis* GRAY, Hand-list, i, 1869, 238, no. 3452.

*Oreothlypis gutturalis* RIDGWAY, Auk, i, Apr., 1884, 169; Proc. U. S. Nat. Mus., xiv, 1891, 473 (descr. young female).—ZELEDON, Proc. U. S. Nat. Mus., viii, 1885, 105; Anal. Mus. Nac. Costa Rica, i, 1887, 106 (Irazú).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 524 (descr. young).

### OREOTHLYPIS SUPERCILIOSA (Hartlaub).

#### HARTLAUB'S WARBLER.

*Adult male*.—Pileum, hindneck, sides of head, and auricular region plain deep slate-gray or slate color, changing to darker slate or dull blackish on orbital region and lores; a conspicuous superciliary stripe of white extending from base of maxilla to behind auriculars; back, scapulars, and rump plain bright olive-green; wings, upper tail-coverts, and tail slate-gray, the inner webs of rectrices edged with white, most broadly on outer pair; malar region, chin, throat, chest, and breast bright yellow (lemon or gamboge), the upper chest marked with a transverse (usually crescentic) spot or patch of rich chestnut; abdomen and under tail-coverts white; sides and flanks light olive-grayish; maxilla brownish black or dusky; mandible pale horn color (in dried skins); legs and feet horn color (in dried skins); length (skins), 106.7–116.8 (111.2); wing, 61.5–65.3 (63); tail, 45–49.3 (48); exposed culmen, 10.2–11.9 (10.7); tarsus, 13.5–16 (15.7); middle toe, 9.4–10.4 (9.9).<sup>1</sup>

*Adult female*.—Similar to the adult male and sometimes not distinguishable, but usually slightly duller in color, with the chestnut jugular spot smaller, paler, often obsolete, sometimes wanting; yellow of throat, etc., rather paler; length (skins), 104.1–114.3 (109.5); wing, 58.4–60.4 (59.9); tail, 43.4–46.7 (45.5); exposed culmen, 10.2–10.9 (10.7); tarsus, 15.5–16.8 (16.3); middle toe, 9.6–10.4 (10.2).<sup>2</sup>

*Young, first plumage*.—Similar to duller-colored adult females, but plumage of looser texture, gray parts tinged with olive, and the middle and greater wing-coverts tipped with dull whitish or buffy, producing two narrow bars.<sup>3</sup>

Highlands of Mexico, in States of Chihuahua (Jesus Maria), Durango (Ciudad Durango; El Salto), Jalisco (Sierra Nevada; San Sebastian), Michoacan (Patzcuaro), Puebla (Huachinango), Vera Cruz (Orizaba; Mirador; Las Vigas), Hidalgo (Real del Monte; El Chico), Guerrero (mountains near Chilpancingo), Oaxaca (La Parada; Talea; Cerro San Felipe), and Chiapas (San Cristobal); highlands of Guatemala (Coban to Chisec; Quezaltenango; Volcan de Fuego; Santa Barbara; Calderas).

<sup>1</sup> Ten specimens.

<sup>2</sup> Four specimens.

<sup>3</sup> The two specimens from which the above description was taken are full-grown and only partly in first plumage, the yellow of anterior lower parts having already been acquired.

*Controstrum superciliosum* HARTLAUB, Rev. Zool., 1844, 215.

*Parula superciliosa* SCLATER, Proc. Zool. Soc. Lond., 1858, 299 (La Parada, Oaxaca); 1859, 373 (Talea, Oaxaca); Cat. Am. Birds, 1862, 26 (La Parada).—SCLATER and SALVIN, Ibis, 1859, 10 (Guatemala).—BAIRD, Review Am. Birds, 1865, 169, 171 (Orizaba, Vera Cruz; alpine reg.).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 545 (alpine region, Vera Cruz).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 122, pl. 8, fig. 2 (Quetzaltenango, Volcan de Fuego, ridge above Chucuc, and Santa Barbara, Guatemala, etc.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 255, 642 (near City of Mexico; Ciudad Durango; Oaxaca; Calderas, Guatemala, etc.).

[*Parula*] *superciliosa* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8.

"*P[arula]*" *superciliosa* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 208, in text.

[*Mniotilta*] *superciliosa* GRAY, Hand-list, i, 1869, 238, no. 3450.

*Oreothlypis superciliosa* RIDGWAY, Auk, i, April, 1884, 169; Man. N. Am. Birds, 1887, 481, footnote, in text.

[*Ompsothlypis*] *mexicana* CABANIS, Mus. Hein., i, 1850, 21 (Mexico; coll. Berlin Mus.; ex *Sylvia mexicana* Lichtenstein, manuscript).

[*Parula*] *mexicana* BONAPARTE, Consp. Av., i, 1850, 310.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 237, footnote.

*Hypothymis mexicana* LICHTENSTEIN, Journ. für Orn., Jan., 1863, 58.

#### Genus COMPSOTHTLYPIS Cabanis.

*Chloris* (not of Cuvier, 1799) BOIE, Isis, 1826, 972. (Type, *Parus americanus* Linnaeus.)

*Sylacola* (not of Harrie, 1782, nor of Humphrey, 1797) SWAINSON, Zool. Journ., iii, July, 1827, 160. (Type, *Parus americanus* Linnaeus.)

*Parula* (not *Parulus* Spix, 1824) BONAPARTE, Geog. and Comp. List, 1838, 20. (Type, *Parus americanus* Linnaeus.)

*Compsotthlypis* CABANIS, Mus. Hein., i, 1850, 20. (Type, *Parus americanus* Linnaeus.)

its scutella indistinct (more or less fused on outer side); middle toe with claw much shorter than tarsus; basal phalanx of middle toe united for more than half its length to outer toe, for about half its length, or slightly more, to inner toe.

*Coloration*.—Bluish gray or grayish blue above, with an olive-green patch on interscapular region; beneath with more or less of yellow; wings usually with white bands.

*Nidification (so far as known)*.—Nest concealed within pendant tufts of arboreal lichens or filiform epiphytes.

*Range*.—Eastern United States and tropical America in general; West Indies in winter. (Three species.)

KEY TO THE SPECIES AND SUBSPECIES OF *COMPSOTHLYPIS*.

- a. Throat and breast yellow; back olive-green. (Adults.)
  - b. Posterior half, or more, of under parts white, or at least not distinctly yellow; a white spot on each eyelid; malar region gray or bluish. (*Compsothlypis americana*.)
    - c. Brighter in color; general hue of upper parts grayish blue; throat and breast bright yellow, the chest with more or less of orange-tawny, chestnut, or dusky, or with all these colors. (Adult males.)
      - d. Duller in color, usually without any distinct dusky band or conspicuous intermixture of chestnut across chest; bill larger (exposed culmen averaging 10.6). (South Atlantic States, north to coast of Virginia, occasionally farther northward and westward.)
        - Compsothlypis americana americana*, adult male (p. 481)
      - dd. Brighter in color, usually with a distinct, often very conspicuous, dusky band and intermixture of chestnut on chest; bill smaller (exposed culmen averaging less than 10).
        - e. Larger (wing averaging 60.6, tail 42.5). (Northeastern United States, breeding from interior districts of Maryland and Virginia northward.)
          - Compsothlypis americana usneæ*, adult male (p. 484)
        - ee. Smaller (wing averaging 57.4, tail 40.9). (Mississippi Valley, breeding from Mississippi, Louisiana, and Texas to Minnesota and Michigan.)
          - Compsothlypis americana ramalinæ*, adult male (p. 486)
      - cc. Duller in color; general hue of upper parts gray or bluish gray; throat and breast pale yellow, the chest similar, or with but little and inconspicuous, if any, admixture of orange-tawny or dusky. (Adult females.)
        - d. Wing averaging more than 54, tail averaging more than 39.
          - e. Smaller, with larger bill (wing averaging 54.7, tail 39.6, exposed culmen 10.1).....*Compsothlypis americana americana*, adult female (p. 481)
          - ee. Larger, with smaller bill (wing averaging 56.9, tail 40.1, exposed culmen 9.9).....*Compsothlypis americana usneæ*, adult female (p. 484)
        - dd. Wing averaging 50.2, tail 38.5.
          - Compsothlypis americana ramalinæ*, adult female (p. 486)
    - bb. Less than posterior half of under parts white; no white on eyelids; malar region yellow.
      - c. Lores and suborbital region black or dusky; subterminal white spot on inner web of lateral rectrices large and sharply defined; posterior under parts largely white; colors much brighter, the adult males distinctly bluish gray or grayish blue above, and with yellow of under parts deepening into tawny-yellow or orange-ochraceous on chest. (*Compsothlypis pitiayumi*.)

- d. Middle wing-coverts without distinct, if any, white tips; flanks yellow.
- e. Darker and more richly colored; pileum, hindneck, rump, etc., dull indigo blue; throat and chest rich orange-ochraceous or orange-tawny; white tips to greater wing-coverts more distinct. (Nicaragua to Isthmus of Panama.) ..... *Compsothlypis pitiayumi speciosa*, adults (p. 487)
- ee. Paler; pileum, hindneck, rump, etc., bluish slate-color; throat and chest gamboge yellow, sometimes slightly tinged with orange-ochraceous; white tips to greater wing-coverts less distinct, sometimes obsolete. (Guatemala; State of Chiapas, southern Mexico.)
- ..... *Compsothlypis pitiayumi inornata*, adults (p. 488)
- dd. Middle wing-coverts broadly tipped with white; flanks not yellow.
- e. Tail not more than 43.9, tarsus not more than 16; wing averaging not more than 54.6 in male, nor more than 51.8 in female; flanks dull whitish, slightly if at all tinged with either grayish or rusty brownish.
- f. Smaller (wing averaging 51.6 in male, 47 in female; tail averaging 39.9 in male, 35.3 in female); less white on wing-coverts, that on greater coverts occupying less than exposed terminal half; flanks paler, dull white, slightly if at all tinged with gray or rusty. (Eastern Mexico and southern Texas.) ... *Compsothlypis pitiayumi nigrilora*, adults (p. 490)
- ff. Larger (wing averaging 54.6 in male, 51.8 in female; tail averaging 40.9 in male, 39.6 in female); more white on wing-coverts, that on greater coverts extending nearly to tips of middle coverts; flanks darker, more or less tinged with gray or rusty, or both. (Western Mexico.)
- ..... *Compsothlypis pitiayumi palahra*, adults (p. 491)
- ee. Tail not less than 46.5, tarsus not less than 18.5; wing averaging 57.4 in male, 54.6 in female; flanks deep grayish, strongly tinged with rusty brownish. (Tres Marias Islands, western Mexico.)
- ..... *Compsothlypis pitiayumi insularia*, adults (p. 492)
- c. Lores and suborbital region grayish, flecked with whitish or pale yellowish; white subterminal spot on inner webs of lateral rectrices smaller, not sharply defined, sometimes obsolete; posterior under parts pale yellowish, the flanks shaded with olive; colors much duller, the adult male dull gray (often tinged with olive) above, and with yellow of under parts not deeper on chest. (Socorro Island, northwestern Mexico.)



COMPSOTHTLYPIS AMERICANA AMERICANA (Linnæus).

PARULA WARBLER.

*Adult male*.—Head and neck, except chin, throat, lores, and eyelids, dull grayish blue or bluish gray; lores darker, usually blackish; a small white spot or streak on posterior portion of upper eyelid, and a larger spot of white on lower eyelid; interscapular region yellowish olive-green, forming a triangular patch; scapulars, lesser wing-coverts, rump, upper tail-coverts, and middle rectrices plain bluish gray, rather lighter than color of head; middle and greater wing-coverts, remiges, and rectrices (except middle pair) blackish or dusky, edged with bluish gray, the middle and greater wing-coverts broadly tipped with white, forming two conspicuous bands, the anterior of which is broadest; inner webs of three outermost rectrices with a large subterminal spot of white, of which that on the exterior rectrix is much the largest; chin, throat, and breast gamboge yellow; chest varying from plain yellowish tawny to deep tawny (the feathers margined with yellow) usually with more or less of dusky across the upper portion, sometimes forming a rather distinct narrow band, the yellow of the throat also sometimes tinged with tawny; sides of breast bluish gray, sometimes tinged with pale chestnut posteriorly; rest of under parts white, the sides and flanks tinged with grayish; maxilla black, mandible yellowish (bright yellow in life); iris brown; legs and feet brownish (in dried skins); length (skins), 95–107 (101.6); wing, 55.5–61 (58.5); tail, 40.5–45 (42.5); exposed culmen, 10–11.5 (10.6); tarsus, 15.5–17.5 (16.7).<sup>1</sup>

*Adult female*.—Similar to the adult male, but much duller in color, especially the under parts; gray of upper parts less bluish; yellow of throat, chest, and breast paler and duller, the chest only faintly, if at all, tinged with tawny, never with a distinct (usually without any) dusky band across upper portion; length (skins), 96–108 (99.7); wing, 52–58.5 (54.7); tail, 37.5–42 (39.6); exposed culmen, 10–11 (10.1); tarsus, 15.5–17 (16.1).<sup>2</sup>

<sup>1</sup> Twenty-one specimens.

<sup>2</sup> Eleven specimens.

Breeding specimens from the coast of Virginia compare in measurements with those from South Carolina and Georgia, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.
MALES.				
Twelve adult males from South Carolina and Georgia .....	58.8	42.7	10.6	16.7
Nine adult males from coast of Virginia .....	58.3	42.2	10.6	16.6
FEMALES.				
Seven adult females from South Carolina, Georgia, and Florida .....	55.1	38.9	10.2	16.2
Four adult females from coast of Virginia (Dismal Swamp) .....	54.1	39.4	10.1	15.9

The two series are practically identical in coloration.

*Young male in first autumn.*—Essentially like the adult male, but the bluish gray of upper parts more or less strongly tinged with olive-green, especially on head and neck; sides and flanks tinged with brownish buffy; yellow of throat and breast duller, the darker jugular area more or less obscured by yellowish tips or margins to the feathers; a whitish supraloral mark. (Adult males in winter differ from spring and summer specimens mainly, if not wholly, in having a slight tinge of olive green to the bluish gray of head, neck, and rump and a slight olivaceous tinge to sides and flanks.)

*Young female in first autumn.* Differing from the adult female in the same characters which distinguish the young male in same plumage.

*Young, first plumage.* Above plain slate-gray, slightly tinged with olive-green; middle and greater wing-coverts narrowly tipped with white; chin and upper throat pale yellowish; lower throat, chest, sides, and flanks plain light gray (intermediate between mouse gray and gray no. 6); abdomen, anal region, and under tail-coverts white; remiges and rectrices as in adults.

More southern portions of Atlantic and eastern Gulf coast districts of United States, breeding from Florida, Georgia, and Alabama (vicinity of Mobile) at least to coast of Virginia (Cape Charles, Eastville, Dismal Swamp, etc.), probably to Delaware and southern New Jersey; occasional farther northward (District of Columbia and vicinity; Carlisle, Pennsylvania; Sing Sing and Shelter Island, New York; Cape Cod, Massachusetts);<sup>1</sup> also occasional in more southern portions of the interior (Rockwood, Tennessee, April 24; Mount Carmel, Illinois, April 19); apparently wintering mainly in Florida.<sup>2</sup>

[*Parus*] *americanus* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 190 (Carolina, based on *Parus frugillaris* Catesby, Nat. Hist. Carolina, i, 64, pl. 64); ed. 12, i, 1766, 341.—GIMELIN, Syst. Nat., i, 1788, 1007. LATHAM, Index Orn., ii, 1790, 571.

[*Motacilla*] *americana* GIMELIN, Syst. Nat., i, 1788, 960.

[*Sylvia*] *americana* LATHAM, Index Orn., ii, 1790, 520.

*Sylvia americana* BONAPARTE, Ann. Lye. N. Y., ii, 1828, 83, part.—AUDUBON, Orn. Biog., i, 1832, 78, part, pl. 15.

*Sylvia americana* RICHARDSON, Rep. Brit. Assoc. Adv. Sci. for 1838 (1837), 171.

AUDUBON, Synopsis, 1839, 59, part, Birds Am., oct. ed., ii, 1841, 57, part, pl. 6.

*Parula americana* BONAPARTE, Geog. and Comp. List, 1838, 20, part. BAYLIS, Rep. Pacific R. R. Surv., ix, 1858, 238, part, Cat. N. Am. Birds, 1859, ii, 168, part, Review Am. Birds, 1865, 169, part.—COUES, Proc. Boston Soc. N. H., xii, 1868, 108 (South Carolina); Proc. Ac. Nat. Sci. Phila., 1871, 30 (Fort Macon, North Carolina); Check List, 1873, no. 58, part, 2d ed. 1882.

<sup>1</sup>A considerable number of specimens from these northern localities I am quite unable to distinguish from southern examples, in fact, if taken in Georgia or South Carolina, they would be considered very typical, some of them extreme examples of the subspecies, as restricted.

<sup>2</sup>Extrahimal specimens are so few in number and in such condition of plumage that I am not able to make out satisfactorily the winter ranges of the three forms of this species.

- no. 93, part; Birds N. W., 1874, 46, part; Birds Col. Val., 1878, 208, part.—MERRIAM, Am. Nat., viii, 1874, 86 (Ocklawaha R., Florida).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 208, part.—BREWSTER, Bull. Nutt. Orn. Club, v, 1880, 48 (Camden Co., Georgia, breeding).—LOOMIS, Bull. Nutt. Orn. Club, iv, 1879, 211 (Chester Co., South Carolina, breeding).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 88, part.
- [*Parula*] *americana* COUES, Key N. Am. Birds, 1872, 93, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.
- P[arula]* *americana* COUES, Key N. Am. Birds, 2d ed., 1884, 290, part.
- M[nioutilta]* *americana* GRAY, Gen. Birds, i, 1848, 196, part.
- [*Mnioutilta*] *americana* GRAY, Hand-list, i, 1869, 238, no. 3448, part.
- C[ompsothlypis]* *americana* CABANIS, Mus. Hein., i, 1850, 20, part (in synonymy).—RIDGWAY, Man. N. Am. Birds, 1887, 491, part.
- Compsothlypis americana* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 596 (Porto Rico).—STEJNEGER, Auk, i, 1884, 170, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 648, part.—NEHRLING, Our Native Birds, etc., i, 1893, 193, part.—WAYNE, Auk, xii, 1895, 365 (Wacissa R., Florida, breeding).—BREWSTER, Auk, xiii, 1896, 45 (diagnosis; crit.).
- C[hloris]* *americana* JORDAN, Man. Vertebr. E. U. S., 4th ed., 1884, 60, part.
- Motacilla eques* BODDAERT, Tabl. Pl. Enl., 1783, 46 (based on *Figuier cendré, de la Caroline*, Daubenton, Pl. Enl. 731, fig. 1).
- (?) [*Motacilla*] *ludoviciana* GMELIN, Syst. Nat., i, 1788, 983 (Louisiana; based on *Ficedula ludoviciana* Brisson, Orn., iii, 500, pl. 26, fig. 4).<sup>1</sup>
- (?) *Motacilla ludoviciana* LESSON, Traité d'Orn., 1831, 418.
- (?) [*Sylvia*] *ludoviciana* LATHAM, Index Orn., ii, 1790, 535.—STEPHENS, Shaw's Gen. Zool., x, 1817, 713.
- Sylvia torquata* VIEILLLOT, Ois. Am. Sept., ii, 1807, 38, pl. 99 (based on *Parus americanus* Linnæus and *Motacilla ludoviciana* Gmelin); Enc. Méth., ii, 1823, 438.
- Thriothurus torquatus* STEPHENS, Shaw's Gen. Zool., xiv, 1826, 194.
- Sylvia pusilla* (not of Latham, 1790) WILSON, Am. Orn., iv, 1811, 17, pl. 28, fig. 3.
- Sylvicola pusilla* SWAINSON, Zool. Journ., iii, 1827, 169.
- S[sylvicola]* *pusilla* SWAINSON, Classif. Birds, ii, 1837, 245.

The following references I am unable, chiefly from lack of satisfactory material, to allocate:

- Sylvia americana* D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 62.
- Sylvicola americana* JONES, Naturalist in Bermuda, 1839, 59.—DENNY, Proc. Zool. Soc. Lond., 1847, 38 (Cuba; Jamaica).—JARDINE, Contr. Orn., 1848, 82 (Bermudas, Jan.).—HURDIS, Jardine's Contr. Orn., 1850, 35 (Bermudas, Apr. 21).—MARTENS, Journ. für Orn., 1859, 213 (Bermudas).—BLAND, Ann. Rep. Smithsonian. Inst. for 1858 (1859), 287 (Bermudas).—BREWSTER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).—BRYANT, Proc. Bost. Soc. N. H., x, 1866, 67 (Bahamas), 184 (Porto Rico), 250 (Porto Rico).
- Parula americana* NEWTON (A. and E.), Ibis, 1859, 143 (St. Croix).—CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 376 (St. Thomas).—SCLATER, Proc. Zool. Soc. Lond., 1861, 70 (Jamaica); Cat. Am. Birds, 1862, 26 (Jamaica).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba); 1873, 411 (Cuba); Anal. Soc. Esp. Hist. Nat., vii, 1878, 176 (Porto Rico).—ALBRECHT, Journ. für Orn., 1862, 192 (Jamaica).—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 293 (Jamaica).—McILWRAITH, Proc.

<sup>1</sup>Very doubtfully a *Compsothlypis*, and if referable to the present species can only be applied, notwithstanding the locality, to the present form. Santo Domingo is also given as part of the range.

Essex Inst., v. 1866, 85 (Ontario).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 267 (Florida, winter).—COPE, Am. Nat., iv, 1870, 395, 396, 397 (s. Alleghenies).—SCOTT, Proc. Bost. Soc. N. H., xv, 1872, 221 (West Virginia, breeding). BREWSTER, Ann. Lyc. N. Y., i, 1875, 134 (Virginia, breeding).—COY, Birds Bahama Is., 1880, 55; Bull. Nutt. Orn. Club, vi, 1881, 151 (Santo Domingo); Birds Haiti and San Dom., 1885, 24.

*Compsothlypis americana* CABANIS, Journ. für Orn., iii, 1855, 476 (Cuba).—CORY, Auk, iii, 1886, 26 (West Indian references and localities); viii, 1891, 48 (St. Croix; St. Christopher); Birds W. I., 1889, 40; Cat. W. I. Birds, 1892, 117, 155 (St. Bartholomew).—SCOTT, Auk, vii, 1890, 18 (Punta Rassa, Florida, migr.; Key West, Florida, winter).—CHERRIE, Contr. Orn. San Dom., 1896, 11 (winter, till Apr. 2).—WILDE, Auk, xiv, 1897, 289 (Cape May, New Jersey; nesting habits, etc.).—DANIEL, Auk, xix, 1902, 18 (Dismal Swamp, Virginia, breeding).

**COMPSOTHTLYPIS AMERICANA USNEÆ Brewster.**

**NORTHERN PARULA WARBLER.**

Similar to *C. a. americana*, but slightly larger, with smaller bill and darker, richer coloration; adult male with blue of upper parts deeper, and black of lores more intense; lower throat or upper chest (sometimes both) blackish or dusky (the feathers sometimes tipped with chestnut), forming a more or less distinct, often very conspicuous band; lower chest orange-tawny, tawny, or chestnut (the feathers usually margined with yellow), forming usually a distinct and often abruptly defined patch; sides usually more or less tinged or spotted with chestnut.

*Adult male*.—Length (skins), 97–113 (104.7); wing, 57–63 (60.6); tail, 39.5–45 (42.5); exposed culmen, 9–11 (9.7); tarsus, 15.5–18 (16.8).<sup>1</sup>

*Adult female*. Length (skins), 93–105 (99.7); wing, 54–59.5 (56.9);

Eastern United States and British Provinces, breeding from the interior districts of Virginia and Maryland<sup>1</sup> northward to Maine, Anticosti Island, New Brunswick, and northern Ontario(?); casual in southern Greenland; in winter throughout West Indies.<sup>2</sup>

*Sylvia americana* (not *Parus americanus* Linnæus) BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 83, part.—AUDUBON, Orn. Biog., i, 1832, 78, part.—PEABODY, Rep. Orn. Mass., 1839, 11.—THOMPSON, Nat. Hist. Vermont, App., 1853, p. 24.

*Sylvicola americana* AUDUBON, Synopsis, 1839, 59, part; Birds Am., oct. ed., ii, 1841, 57, part.—PUTNAM, Proc. Essex Inst., i, 1856, 207 (Essex Co., Massachusetts).—WILLIS, Ann. Rep. Smithson. Inst. for 1858 (1859), 282 (Nova Scotia).

*S[ylicola] americana* MAXIMILIAN, Journ. für Orn., 1858, 116, part (Pennsylvania).

*Parula americana* BONAPARTE, Geog. and Comp. List, 1838, 20, part.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 238, part; Cat. N. Am. Birds, 1859, no. 168, part; Review Am. Birds, 1865, 169, part.—VERRILL, Proc. Bost. Soc. N. H., ix, 1863, 233 (Oxford Co., Maine).—ALLEN, Proc. Essex Inst., iv, 1864, 59 (Springfield, Massachusetts).—LAWRENCE, Ann. Lyc. N. Y., viii, 1868, 283 (vic. New York City).—BREWER, Am. Nat., i, 1867, 117 (nesting habits); xvii, 1875, 439 (New England).—TRIPPE, Am. Nat., ii, 1868, 177 (habits, etc.).—COUES, Proc. Essex Inst., v, 1868, 269 (Essex Co., Massachusetts); Check List, 1873, no. 58, part; 2d ed., 1882, no. 93, part; Birds N. W., 1874, 46, part; Birds Col. Val., 1878, 208, part.—TURNBULL, Birds E. Penn. and N. J., 1869, 23; Phila. ed., 16.—MAYNARD, Proc. Bost. Soc. N. H., xiv, 1872, 361 (Upton, Maine, etc.).—HERRICK, Bull. Essex Inst., v, 1873, 30 (New Brunswick).—PACKARD, Am. Nat., viii, 1874, 271 (eats cankerworm).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 208, part, pl. 10, fig. 7.—NEWTON (A.), Man. Nat. Hist. Greenland, 1875, 98 (Southern Inspectorate, 1 spec., 1857).—BREWSTER, Proc. Bost. Soc. N. H., xxii, 1884, 370 (Anticosti I., June, July); Bull. Nutt. Orn. Club, iii, 1878, 22 (descr. young).—MINOT, Birds New England, 1877, 99.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 88, part.

[*Parula*] *americana* COUES, Key N. Am. Birds, 1872, 93, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.

*P[arula] americana* COUES, Key N. Am. Birds, 2d ed., 1884, 290, part.

*M[niotilta] americana* GRAY, Gen. Birds, i, 1848, 196, part.

*Mniotilta americana* REINHARDT, Ibis, 1861, 6 (s. Greenland, 1 spec., 1857).

[*Mniotilta*] *americana* GRAY, Hand-list, 1, 1869, 238, no. 3448, part.

(?) *C[ompsothlypis] americana* CABANIS, Mus. Hein., i, 1850, 20, part (North America).—RIDGWAY, Man. N. Am. Birds, 1887, 491, part.

*Compsothlypis americana* STEJNEGER, Auk, i, 1884, 170, part.—BICKNELL, Auk, i, 1884, 212 (song).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 648, part.—TODD, Auk, viii, 1891, 398 (Beaver, Butler, and Armstrong counties, Pennsylvania, breeding).—NEHRLING, Our Native Birds, etc., i, 1893, 193, part, pl. 11, fig. 1.

<sup>1</sup>Specimens from the District of Columbia and adjacent parts of Maryland and Virginia are mainly referable to this form, though averaging slightly less in length of wing and tail but more in length of bill; many are intermediate in coloration between the present form and *C. a. americana*, while occasional specimens can not be distinguished from the latter.

<sup>2</sup>Some West Indian (winter) specimens are undoubtedly of this form; but the differences between *C. a. usneæ* and *C. a. americana* in winter plumage are so much obscured that it is difficult to distinguish them at that season.

*[Chloris] americana* JORDAN, Man. Vertebr. E. U. S., 4th ed., 1884, 60, part.  
*Compsothlypis americana usneæ* BREWSTER, Auk, xiii, Jan., 1896, 44 (Lake Umbagog, Maine; coll. W. Brewster).—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xiv, 1897, 123.—(?) FLEMING, Auk, xviii, 1901, 43 (Muskota, etc., n. Ontario, breeding).

**COMPSOTHTYPIS AMERICANA RAMALINÆ<sup>1</sup> Ridgway.**

**WESTERN PARULA WARBLER.**

Similar in coloration to *C. a. usneæ*, but smaller even than *C. a. americana*.

*Adult male*.—Length (skins), 92–105 (94.8); wing, 54.5–61.5 (57.5); tail, 39–45 (40.9); exposed culmen, 8–11 (9.9); tarsus, 16–17 (16.5).<sup>2</sup>

*Adult female*.—Length (skins), 97–101 (98.3); wing, 52.5–54 (53.5); tail, 37.5–40 (38.5); exposed culmen, 9–10.5 (9.8); tarsus, 14.5–16.5 (15.8).<sup>3</sup>

*Sylvia americana* (not *Parus americanus* Linnaeus) AUDUBON, Orn. Biog., i, 1832, 78, part.

*Sylvicola americana* AUDUBON, Synopsis, 1839, 59, part; Birds Am., oct. ed. ii, 1841, 57, part.—WOODHOUSE, Rep. Sitgreaves' Expl. Zuffi and Col. R., 1853, 71.—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin).—READ, Proc. Ac. Nat. Sci. Phila., vi., 1853, 399 (n. Ohio).—PRATTEN, Trans. Ills. Agric. Soc., 1855, 602 (Illinois).—SCLATER, Proc. Zool. Soc. Lond., 1857, 202 (Tlaxotalpan, Vera Cruz).—TRIPPE, Proc. Essex Inst., vi, 1871, 114 (Minnesota).  
*Parula americana* BONAPARTE, Geog. and Comp. List. 1838, 20, part.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 238, part; Cat. N. Am. Birds, 1859, no. 168, part, Review Am. Birds, 1865, 169, part.—SCLATER and SALVIN, Ibis, 1859, 10 (Guatemala).—DRESSER, Ibis, 1865, 476 (San Antonio, Texas).—LAWRENCE, Ann. Lyc. N. Y., ix, 1869, 200 (Yucatan); Bull. U. S. Nat. Mus.,

<sup>1</sup>From *Ramalina*, a genus of lichens, species of which are very abundant in bottom-land forests of the lower Mississippi Valley, where in many localities fre-

- no. 4, 1876, 15 (Santa Efigenia and Tehuantepec, Oaxaca, Oct., Jan.).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (Orizaba, Vera Cruz, winter).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 124, 175 (Kansas, etc.); Am. Nat., vi, 1872, 265 (Leavenworth, Kansas).—AIKEN, Proc. Bost. Soc. N. H., xv, 1872, 196 (Colorado, 1 spec., May 11.).—COUES, Check List, 1873, no. 58, part, 2d ed., 1882, no. 93, part; Birds N. W., 1874, 46, part; Birds Col. Val., 1878, 208, part.—SCOTT, Bull. Nutt. Orn. Club, iv, 1879, 141 (w. Missouri, breeding).—AIKEN, Proc. Bost. Soc. N. H., xv, 1872, 196 (Colorado).—SNOW, Birds Kansas, 1873, 4 (Leavenworth).—RIDGWAY, Bull. Essex Inst., v, 1873, 180 (Colorado); Nom. N. Am. Birds, 1881, no. 88, part.—AMES, Bull. Minn. Ac. Sci., 1874, 55 (Minnesota).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 208, part; iii, 1874, 504 (El Paso Co., Colorado).—NEHRLING, Bull. Nutt. Orn. Club, vii, 1882, 8 (s. e. Texas, breeding).—HAY, Bull. Nutt. Orn. Club, vii, 1882, 90 (Memphis, Tennessee, and Vicksburg and Jackson, Mississippi, breeding).—MERRIAM, Auk, ii, 1885, 377 (St. Louis, Missouri, breeding; descr. nest).
- [*Parula*] *americana* COUES, Key N. Am. Birds, 1872, 93, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.
- P[arula] americana* RIDGWAY, Ann. Lyc. N. Y., x, 1874, 368 (Illinois, breeding).—BOIES, Cat. Birds s. Mich., 1875, no. 22 (breeding).—NELSON, Bull. Essex Inst., viii, 1876, 98 (n. e. Illinois, breeding).—COUES, Key N. Am. Birds, 2d ed., 1884, 290, part.
- M[niotilta] americana* GRAY, Gen. Birds, i, 1848, 196, part.
- M[niotilta] americana* GRAY, Hand-list, i, 1869, 238, no. 3448, part.
- Compsothlypis americana* STEGNEGER, Auk, i, 1884, 170, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 648, part.—RIDGWAY, Orn. Illinois, i, 1889, 131.—GOSS, Birds Kansas, 1891, 547 (e. Kansas, breeding).—NEHRLING, Our Native Birds, etc., i, 1893, 193, part.—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484 (Rio Escondido, Nicaragua, 1 spec., Oct. 26).—BEYER, Proc. Louisiana Soc. Nat. for 1897-99 (1900), 112 (Louisiana, breeding).
- C[ompsothlypis] americana* RIDGWAY, Man. N. Am. Birds, 1887, 491, part.
- C[hloris americana]* JORDAN, Man. Vertebr. E. U. S., 4th ed., 1884, 60, part.

### COMPSOTHTLYPIS PITIAYUMI SPECIOSA Ridgway.

#### CHIRIQUI PARULA WARBLER.

Similar to *C. p. pitiaiyumi*,<sup>1</sup> but darker and bluer above, throat and chest deeper orange-ochraceous, and middle wing-coverts without white tips; similar in last-mentioned character to *P. p. inornata*, but much more richly colored.

*Adult male*.—Above dull indigo blue, relieved by a triangular patch of olive-green occupying the interscapular region; lores, suborbital region, and anterior margin of forehead black; outermost greater wing-coverts broadly tipped with white, but no white tips to middle

<sup>1</sup> *Compsothlypis pitiaiyumi pitiaiyumi* (Vieillot).

*Sylvia pitiaiyumi* Vieillot, Nouv. Dict. d'Hist. Nat., ii, 1816, 276; *Compsothlypis pitiaiyumi* Cabanis, Mus. Hein., i, 1851, 21; *C[ompsothlypis] p[itiaiyumi] pitiaiyumi* RIDGWAY, Auk, xix, Jan., 1902, 69 in text.—*Sylvia venusta* Temminck, Pl. Col., livr. 49, 1824, pl. 293, fig. 1.—*Sylvia plumbea* Swainson, Zool. Illustr., ii, 1821-22, pl. 139.—*Parula brasiliana* Bonaparte, Consp. Av., i, 1850, 310.



coverts; inner webs of two outermost rectrices with a large, subterminal subquadrate patch of white, the third rectrix sometimes with a small white subterminal spot; malar region, chin, breast, sides, flanks, and abdomen rich lemon yellow; throat and chest deep orange-ochraceous; anal region, under tail-coverts, and under wing-coverts white; maxilla black, mandible pale colored (yellowish in life); iris brown; legs and feet horn brownish (in dried skins); length (skins), 83.8-104 (94.9); wing, 47.5-55 (52.5); tail, 35.3-41 (39.1); exposed culmen, 9.1-10 (9.7); tarsus, 15.7-18 (16.1); middle toe, 9.9-10.4 (10.1).<sup>1</sup>

*Adult female*.—Similar to the adult male, but usually slightly duller in color, with white tips to outermost greater wing-coverts less distinct, and the throat and chest less deeply orange-ochraceous, or yellow slightly tinged with that color; length (skins), 92.7-104.1 (98.9); wing, 47.5-51.8 (49.6); tail, 35.3-38.6 (36.9); exposed culmen (one specimen), 9.1; tarsus, 15.2-15.5 (15.3); middle toe, 9.6-9.9 (9.7).<sup>2</sup>

Nicaragua (Ometepe) to Chiriqui (Boquete de Chitra; Volcan de Chiriqui) and Veragua (Calobre).

*Parula moronata* BAIRD, Review Am. Birds, 1865, 171, part (Angostura and Dota, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 93 (Barranca, Angostura, and Dota Mts., Costa Rica).—SALVADORI, Atti. Roy. Ac. Sci. Torino, iv, 1868, 172 (Costa Rica).—FRANTZUS, Journ. für Orn., 1869, 292 (Costa Rica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 182, part (Volcan de Chiriqui and Boquete de Chitra, Chiriqui; Calobre, Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 120, part (Barranca, Angostura, and Dota Mts., Costa Rica, Volcan de Chiriqui and Boquete de Chitra, Chiriqui; Calobre, Veragua).—NETTING, Proc. U. S. Nat. Mus., vi, 1883, 391 (Ometepe, Nicaragua).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 643, part (Turrialba, Costa Rica, Volcan de Chiriqui, Boquete de Chitra).

[*Parula*] *moronata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.

*Parula p. moronata* (part) *moronata* BAIRD, BREWER, and RIDGWAY, Hist. N. Am.



*Adult male*.—Above plain bluish slate color or dark plumbeous, relieved by a triangular patch of olive-green occupying the interscapular region; lores, anterior portion of forehead, and suborbital region blackish; outermost middle and greater wing-coverts sometimes with indistinct white or pale grayish terminal spots; inner webs of two to three outermost rectrices with a subterminal spot of white, largest on outermost rectrix; under parts yellow (gamboge or lemon), becoming yellowish white on lower abdomen and anal region, the chest slightly tinged with orange-ochraceous, the flanks tinged with olive; under tail-coverts and under wing-coverts white; maxilla black, mandible pale colored (yellowish in life?); legs and feet dark horn brownish (in dried skins); length (skins), 92.7–97.8 (95.2); wing, 50–51.6 (51); tail, 37.3–40 (38.9); exposed culmen, 9–9.4 (9.1); tarsus, 15.2–16.8 (16); middle toe, 9.4–9.6 (9.5).<sup>1</sup>

*Adult female*.—Similar to the adult male, but slightly paler and duller in color; length (skin), 91.4; wing, 47.5; tail, 36.6; exposed culmen, 9; tarsus, 14.5; middle toe, 8.4.<sup>2</sup>

*Young, first plumage*.—Above plain grayish olive, inclining to olive-green on back; middle and greater wing-coverts indistinctly tipped with pale grayish; under parts dull white, the chest and sides of breast shaded with pale olive-grayish.

Highlands of Guatemala (Choctum) and Chiapas (Ocuilapa; near Tuxtla Gutierrez).

*Parula brasiliana* (not *Sylvia brasiliana* Lichtenstein) SALVIN and SCLATER, Ibis, 1860, 397 (Guatemala).

[*Parula*] *inornata* BAIRD, Review Am. Birds, Nov., 1864, 169.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.

*Parula inornata* BAIRD, Review Am. Birds, Nov., 1864, 171, part (type from Choctum, Vera Paz, Guatemala; coll. O. Salvin).—SALVIN, Proc. Zool. Soc. Lond., 1870, 182, part (Choctum).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 120, part, pl. 8, fig. 1 (Choctum).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 643, part (Choctum).

[*Mniotilta*] *inornata* GRAY, Hand-list, i, 1869, 238, no. 3451.

[*Parula pitiauyumi*] var. *inornata* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 208, part (Guatemala).

*Compsothlypis pitiauyumi inornata* STEJNEGER, Auk, i, Apr., 1884, 170.

[*Parula pitiauyumi*.] Subsp.  $\alpha$ . *Parula inornata* SHARPE, Cat. Birds Brit. Mus., x, 1885, 260, part (Guatemala).

(*Compsothlypis*) *inornata* RIDGWAY, Man. N. Am. Birds, 1887, 492, part (Guatemala).

*Compsothlypis inornatus* NELSON, Auk, xv, 1898, 159 (near Tuxtla Gutierrez, e. Chiapas).

(*Compsothlypis*) *p[itiauyumi] inornata* RIDGWAY, Auk, xix, Jan., 1902, 69, in text.

<sup>1</sup> Three specimens.

<sup>2</sup> One specimen, from Ocuilapa, Chiapas.

## COMPSOTHTLYPIS PITIAYUMI NIGRILORA (Coeus).

## SENNETT'S PARULA WARBLER.

Similar to *C. p. inornata*, but with two distinct white wing-bands and without yellow on flanks; differing from *C. p. pulchra* in smaller size, much narrower white wing-bands (the second occupying less than terminal exposed half of greater coverts), and white subterminal spot on inner web of lateral rectrices much smaller, rarely indicated on third rectrix.

*Adult male*.—Head and neck (except chin and throat), scapulars, lesser wing-coverts, rump, and upper tail-coverts plain, slightly bluish, slate-gray, the lores and suborbital region distinctly darker, inclining to black, especially the former; innermost middle wing coverts also slate-gray, the outermost ones broadly tipped with white, forming a distinct spot or short bar; greater coverts with inner webs blackish, outer webs slate-gray, broadly tipped with white (except on innermost feathers), the white occupying less than the terminal exposed half; remiges dusky with slate-gray edgings, the outer webs of tertials mostly gray; rectrices dusky edged with bluish slate-gray, the inner webs of two or three outermost with a subterminal spot of white; back yellowish olive green, forming a triangular patch; malar region, chin, throat, breast, and upper part of abdomen yellow (lemon or gamboge), deepening on chest into saffron or ochraceous yellow; lower abdomen, anal region, under tail-coverts, and under wing-coverts white; sides and flanks dull whitish, slightly tinged with grayish, rarely slightly tinged with rusty or pale chestnut; maxilla black, mandible pale yellowish brown (yellow in life); iris brown; legs and feet brownish in dried skins; length (skins), 94–105.4 (99.3); wing, 49–53.8 (51.6); tail, 37.6–42.7 (39.9); exposed culmen, 9.1–10.4 (9.6); tarsus, 15.2–16 (15.7); middle toe, 9.6–10.2 (9.6).<sup>1</sup>

*Adult female*.—Similar to the male but slightly smaller and duller in color; length (skins), 90.2–97.8 (94); wing, 45.2–49 (47); tail, 33–37.6 (35.3); exposed culmen, 9.9; tarsus, 15.2–16.8 (16); middle toe, 9.4.<sup>1</sup>

Eastern Mexico, in States of Tamaulipas (Alta Mira; Tampico), Nuevo Leon (Montemorelos), and San Luis Potosi (Valles); north to southern Texas.

*Parula pitiayumi* (not *Sylvia pitiayumi* Vieillot, BREWER, Ibis, 1878, 116 (Fort Brown, Texas).

*Parula nigrilora* Coeus, Bull. U. S. Geol. and Geog. Surv. Terr., iv, no. 1, Feb. 5, 1878, 11 (Hidalgo, Texas, coll. U. S. Nat. Mus.; Birds Col. Val., 1878, 207; Check List, 2d ed., 1882, no. 94. SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 12 (Hidalgo, Texas, habits; v, 1878, 384 (Lomita, Texas; habits, descr. nests and eggs; measurements) MERRILL, Proc. U. S. Nat. Mus., 1, 1878, 123 (Fort Brown, Texas. BREWER, Ibis, 1878, 204. ALLEN,

<sup>1</sup>Ten specimens.<sup>2</sup>Two specimens.

Bull. Nutt. Orn. Club, v, 1880, 89.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 121; Ibis, 1889, 236 (Tampico, Tamaulipas; Nuevo Leon; Valles, San Luis Potosi).

[*Parula*] *pitiayumi* var. *nigrilora* COUES, Birds Col. Val., 1878, 208, footnote, in text. *Parula pitiayumi nigrilora* RIDGWAY, Proc. U. S. Nat. Mus., iii, Aug. 24, 1880, 171; Nom. N. Am. Birds, 1881, no. 89a.

[*Parula pitiayumi*.] Subsp.  $\beta$ . *Parula nigrilora* SHARPE, Cat. Birds Brit. Mus., x, 1885, 261, pl. 11, fig. 2.

*P[arula] nigrilora* COUES, Key N. Am. Birds, 2d ed., 1884, 291.

*Compsothlypis nigrilora* STEINEGER, Auk, i, Apr., 1884, 170.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 649.—COOKE, Bird Migr. Miss. Val., 1888, 244 (Fort Brown, Texas).—NEHRLING, Our Native Birds, etc., i, 1893, 195.

*C[ompsothlypis] nigrilora* RIDGWAY, Man. N. Am. Birds, 1887, 491.

### COMPSOTHTLYPIS PITIAYUMI PULCHRA (Brewster).

#### BEAUTIFUL PARULA WARBLER.

Similar to *C. p. nigrilora*, but larger and with much more white on wing-coverts, that on greater coverts occupying more than exposed half (sometimes extending quite to tips of middle coverts) in adult male; flanks more often and more strongly tinged with rusty or pale chestnut. Similar also to *C. p. insularis* but smaller; flanks paler and less strongly tinged with chestnut; white on wing-coverts much more extended; white subterminal spot on inner webs of lateral rectrices much larger, always distinct on second, sometimes present on third; adult male with lores and orbits distinctly blackish.

*Young, first plumage*.—Above plain brownish gray, the back slightly tinged with olive; beneath dull white, the sides of breast slightly tinged with gray, the upper throat and center of breast faintly tinged with pale yellow; white wing-bands much narrower than in adults.

*Adult male*.—Length (skins), 99.1–101.6 (99.8); wing, 53.3–56.9 (54.6); tail, 39.1–43.9 (41); exposed culmen, 9.6–9.9 (9.7); tarsus, 15.5–16 (15.7); middle toe, 9.6–10 (9.9).<sup>1</sup>

*Adult female*.—Length (skin), 96.5; wing, 51.8; tail, 39.6; tarsus, 15.7; middle toe, 9.6.<sup>2</sup>

Western Mexico, in States of Chihuahua (Hacienda San Rafael), Sinaloa (Presidio; Plomosas), and Jalisco (Barranca Ibarra).

*Parula nigrilora* (not of Coues) SHARPE, Cat. Birds Brit. Mus., x, 1885, 643 (Presidio, near Mazatlan, w. Mexico).

*Compsothlypis pulchra* BREWSTER, Descr. Supposed New Birds from W. North Am. and Mex., Jan. 31, 1889, 93; Auk, vi, Apr., 1889, 93 (Hacienda de San Rafael, Chihuahua, n. w. Mexico; coll. W. Brewster).

<sup>1</sup> Three specimens.

<sup>2</sup> One specimen.

## COMPSOTHLYPIS PITIAYUMI INSULARIS (Lawrence).

## TRES MARIAS PARULA WARBLER.

Similar *C. p. pulchra*, but larger; flanks darker, much tinged with grayish and more or less strongly tinged with chestnut; white on wing-coverts more restricted (as in *C. p. nigrilora*); subterminal white spots on inner web of lateral rectrices smaller, present on only one or two, instead of two or three; adult male with lores and orbits not distinctly darker than pileum and auricular region, or at least not approaching black.

*Adult male.*—Length (skins), 106.7–115.6 (113); wing, 54.1–59.2 (57.4); tail, 45.7–52.6 (48.8); exposed culmen, 9.4–10.4 (9.9); tarsus, 18.5–19.8 (19); middle toe, 9.9–10.4 (10.2).<sup>1</sup>

*Adult female.*—Length (skins), 106.7–109.2 (108.4); wing, 53.3–55.4 (54.6); tail, 46–49 (47.2); exposed culmen, 9.6–10.2 (9.9); tarsus, 18–18.5 (18.3); middle toe, 9.6–10.4 (9.9).<sup>2</sup>

Tres Marias Islands, western Mexico.

*Parula pitiayumi* (not *Sylvia pitiayumi* Vieillot) BAIRD, Review Am. Birds, 1865, 266 (Tres Marias Islands, w. Mexico).

*Parula insularis* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., x, Feb., 1871, 4 (Tres Marias Islands, w. Mexico; coll. U. S. Nat. Mus.); Proc. Bost. Soc. N. H., xiv, 1871, 278 (Tres Marias); Mem. Bost. Soc. N. H., ii, 1874, 269, part (Tres Marias).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 121, part (Tres Marias).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 643, part (Tres Marias).

[*Parula pitiayumi*] var. *insularis* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 207 (Tres Marias).

[*Parula pitiayumi*.] Subsp. *y.* *Parula insularis* SHARPE, Cat. Birds Brit. Mus., x, 1885, 263, excl. syn. part and locality "Socorro."

*Compsotylus* [excl. sic] STEENSTRA, A. K. 1 Apr. 1894 170 excl. syn. part. NEU.

flanks pale yellowish olive; under wing-coverts white; maxilla black; mandible very pale brownish (yellowish in life?), usually dusky at tip; iris brown; legs and feet deep horn brown (in dried skins).

*Adult male*.—Length (skins), 107.9–111.8 (109.7); wing, 52.1–53.3 (52.6); tail, 46.7–48.3 (47.2); exposed culmen, 9.6–10.2 (9.9); tarsus, 17.8–19 (18.5); middle toe, 10.7–10.9 (10.8).<sup>1</sup>

*Adult female*.—Length (skins), 110.5–114.3 (112.3); wing, 52.1–53.3 (52.8); tail, 46.2–47 (46.7); exposed culmen, 9.9–10.2 (10.1); tarsus, 19–19.3 (19.1); middle toe, 9.9–10.7 (10.2).<sup>2</sup>

Socorro Island, Revillagigedo group, northwestern Mexico.

*Parula insularis* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., x, 1871, 4, part (Socorro Island, n. w. Mexico); Proc. Bost. Soc. N. H., xiv, 1871, 300 (Socorro); Mem. Bost. Soc. N. H., i, 1874, 269, part (Socorro).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 121, part (Socorro).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 643, part (Socorro).

[*Parula pitiauyumi*] var. *insularis* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 207, part (Socorro).

*Parula pitiauyumi insularis* RIDGWAY, Proc. U. S. Nat. Mus., iii, Aug. 24, 1880, 171, 215 (Socorro); Nom. N. Am. Birds, 1881, no. 89.

[*Parula pitiauyumi*.] Subsp. *γ*. *Parula insularis* SHARPE, Cat. Birds Brit. Mus., x, 1885, 263, part (not description).

*Compsothlypis insularis* STEJNEGER, Auk, i, 1884, 170, part.

*C[ompsothlypis] graysoni* RIDGWAY, Man. N. Am. Birds, 1887, 492 (Socorro Island, Revillagigedo Group, n. w. Mexico; coll. U. S. Nat. Mus.).

*Compsothlypis graysoni* RIDGWAY, Man. N. Am. Birds, 1887, 592; 2d ed., 1896, 614. —TOWNSEND, Proc. U. S. Nat. Mus., xiii, 1890, 135 (Socorro).—ANTHONY, Auk, xv, 1898, 317 (Socorro).

### Genus PEUCEDRAMUS Coues.

*Peucedramus* COUES, in Henshaw's Zool. Exped. W. 100th Merid., 1875, 201. (Type, *Sylvia olivacea* Giraud.)

*Peucedromus* (emendation) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 142.

Similar to *Dendroica*, but bill weaker, more subulate; tail more deeply emarginate; a white spot at base of primaries in connection with two white wing-bands.

Bill much shorter than head, short-subulate, of uniform depth for most of its length, depressed basally, compressed terminally; subterminal notch of maxillary tomium indistinct or obsolete. Rictal bristles weak and few (only three distinct). Wing long, pointed; eighth, seventh, and sixth primaries longest, the ninth but little shorter, equal to or longer than fifth; wing-tip very long (longer than tarsus). Tail equal to distance from bend of wing to tips of secondaries, deeply emarginate, the rectrices rather narrow. Tarsus about one-fourth as long as wing, very slender, its scutella indistinct (fused on outer side); middle toe, with claw, much shorter than tarsus; basal phalanx of

<sup>1</sup> Four specimens.

<sup>2</sup> Three specimens.

middle toe united for more than half its length to outer toe, for about half its length to middle toe.

*Coloration*.—Head, neck, and chest tawny, orange-rufous, or deep ochraceous (adult male), or buffy yellowish (female), with a black band covering loreal, suborbital and auricular regions (adult male), or a dusky patch on auricular region (female); two white wing-bands, a white spot at base of longer primaries, and much white on inner webs of lateral rectrices.

*Habitat*.—Arboreal.

*Range*.—Highlands of Mexico and Guatemala, and high mountains of southern and central Arizona. (Monotypic.)

**PEUCEDRAMUS OLIVACEUS (Giraud).**

**OLIVE WARBLER.**

*Adult male in summer*.—Head, neck, and chest plain ochraceous, the sides of head with a broad band of black, involving the lores, orbits, and auricular region; lower hindneck and extreme upper back yellowish olive-green, this sometimes extending over whole hindneck to, and including, the occiput; back, scapulars, rump, and upper tail-coverts plain mouse gray; wings and tail dull blackish; middle and greater wing-coverts broadly tipped with white, forming two conspicuous bands, of which the anterior one is the broader; innermost greater coverts edged with light grayish olive-green; secondaries edged with more yellowish olive-green; primaries narrowly edged with whitish, the seventh to the third white at base, forming a conspicuous spot; rectrices narrowly edged with pale grayish, usually becoming more olive-greenish basally; inner webs of two outermost rectrices largely white, this occupying much the greater part on exterior rectrix, the

*Adult female in winter*.—Similar to the summer female, but plumage of softer texture and posterior wing-band more or less tinged with yellowish.

*Immature male (second year)*.—Identical in coloration with adult female.

*Young male, first plumage*.—Pileum, hindneck, back, scapulars, rump, and upper tail-coverts plain dull olive or brownish olive; supra-auricular region and sides of neck dull yellowish buffy, the latter tinged with olive; chin, throat, and chest dull yellowish buffy; otherwise like adult female.

*Young female, first plumage*.—Similar to the young male but paler and grayer above; supra-auricular and post-auricular regions pale brownish buffy; chin, throat, and chest still paler buffy, the chin and upper throat dull buffy whitish.

*Adult male*.—Length (skins), 113–129 (120);<sup>1</sup> wing, 72–78 (74.8); tail, 50–56 (53.6); exposed culmen, 9.1–12 (10.7); tarsus, 17–20 (18.2); middle toe, 10.5–13 (11.2).<sup>2</sup>

*Adult female*.—Length (skins), 110–125 (117);<sup>3</sup> wing, 67–73 (69.9); tail, 47.2–53 (49.4); exposed culmen, 9–12 (10.5); tarsus, 17–20 (18.2); middle toe, 10.4–12 (11.5).<sup>4</sup>

Highlands (coniferous belt) of Mexico, Guatemala, and southwestern United States; north to central Arizona (Huachuca, Chiricahua, Santa

<sup>1</sup>Length before skinning of six Arizona specimens, 127–137.2 (134.2). (Brewster, Bull. Nutt. Orn. Club, vii, 1882, 137.)

<sup>2</sup>Sixteen specimens.

<sup>3</sup>Length before skinning of five Arizona specimens, 127–132.1 (129.5). (Brewster, Bull. Nutt. Orn. Club, vii, 1882, 137.)

<sup>4</sup>Thirteen specimens.

Specimens from different geographic areas average in measurements as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
MALES.					
Nine adult males from Arizona and south to Jalisco.....	75.2	52.8	10.9	17.9	10.8
Four adult males from southeastern Mexico.....	75.6	54.2	10.6	18.8	11.5
Three adult males from Guatemala (2) and Chiapas (1)....	72.5	51.5	10.4	18.4	11.9
FEMALES.					
Four adult females from Arizona (3) and Chihuahua (1)...	70.5	49.9	10.7	17.7	10.9
Eight adult females from southeastern Mexico .....	70.2	50.2	10.6	18.5	11.4
One adult female from Guatemala .....	65.6	41.2	9.2	18	12

There is an appreciable difference in size and coloration between specimens from Arizona and northwestern Mexico on the one hand and those from Guatemala on the other, the latter being smaller and brighter colored; but specimens from southern Mexico, while nearer the Guatemalan examples in coloration, are larger even than the Arizona birds. On the whole, I am unable to make out satisfactorily two, or more, geographic forms, and therefore reduce *P. o. aurantiacus* to a synonym of *P. olivaceus*.

Catalina, Graham, Mogollon, and White Mountains), south to Choctum and Chilasco, Guatemala.

*Sylvia olivacea* GIRAUD, Sixteen Species Texan Birds, 1841, 29, pl. (7), fig. ("Texas;" type in coll. U. S. Nat. Mus.).—SCLATER, Proc. Zool. Soc. Lond., 1855, 66.

*Sylvicola olivaceus* BAIRD, in Rep. Stansbury's Surv. Gt. Salt Lake, 1852, ("Texas").—CASSIN, Illustr. Birds Cal., Tex., etc., 1855, 283, pl. 48.

*Rhinamphus olivaceus* SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Corrova, Vera Cruz).

*Dendroica olivacea* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 305; Review of Birds, 1865, 205 (Choctum, Guatemala; Popocatepetl, Mexico; Orizaba, Vera Cruz).—SCLATER, Proc. Zool. Soc. Lond., 1858, 238 (La Parula, Oaxaca).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (alpine region Vera Cruz 5,000 to 10,000 ft.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 258, pl. 14, fig. 4.—HENSHAW, Am. Sportsman, v, Feb. 20, 1878, 328 (Mount Graham, Arizona).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1896, no. 651.—MEARNS, Auk, vii, 1890, 261 (Mogollon Mts., Arizona; breeding in pine belt).—NEHRING, Our Native Birds, etc., i, 1893, 19 (Pinar, Auk, xii, 1895, 17-19 (nesting habits, etc.)).—COX, Auk, xii, 1895, (Mount Orizaba, 11,000 ft.).—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, (Las Vigas, Vera Cruz, 8,000 ft., in pines; notes).

*Dendroica olivacea* RIDGWAY, Man. N. Am. Birds, 1887, 494.

*Dendroica olivacea* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz).—CMT. Am. Birds, 1862, 31 (Jalapa; Popocatepetl).—SALVIN, Ibis, 1866, (Guatemala).

[*Dendroica*] *olivacea* COOPER, Key N. Am. Birds, 1872, 99.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.

*Dendroica olivacea* SUNDEVAL, Öfv. K. Vet.-Ak. Förh. Stockh., xxvi, 1870, (monogr.).

*Peucedramna olivacea* HENSHAW, Zool. Expl. W. 100th Merid., 1875, 202 (Mount Graham, Arizona, habits, etc.).—ALLEN, Bull. Natl. Orn. Club, v, 1880, 88 (Pinar).—Proc. U. S. Nat. Mus., vi, 1880, 171, pl. 116, fig. 1 (New Mexico).



*Dendroica* GRAY, List Gen. Birds, App., 1842, 8. (Type, *Motacilla coronata* Linnaeus.)

*Dendroeca* (emendation) AGASSIZ, Nomencl. Zoolog. Index Univ., 1846, 119.

*Perissoglossa* BAIRD, Review Am. Birds, Apr., 1865, 180. (Type, *Motacilla tigrina* Gmelin.)

Small or medium-sized arboreal or subarboreal Mniotiltidæ, with the bill slender-conoidal, its basal width not greater than its basal depth, gradually tapering toward the tip, the tip of maxilla perceptibly decurved, the maxillary tomium with obvious notch; rictal bristles obvious, but not strongly developed; the tail more than two and a half times as long as tarsus, and inner webs of lateral rectrices partly white or yellow.

Bill shorter than head (usually much shorter), slender-conoidal, tapering gradually to the tip; tip not acute or else (*D. tigrina*) the maxilla appreciably decurved terminally and with subterminal tomial notch (the latter always present). Nostril longitudinal, linear, narrowly oval or subcuneate, overhung by broad membranous operculum. Rictal bristles obvious, but never very distinct. Wing moderate or rather long, rather pointed (four outermost primaries abruptly longest, the ninth always longer than fifth, frequently longer than fourth, sometimes longest); or, in the distinctively Antillean types,<sup>1</sup> rounded, with the ninth primary shorter than the fifth, sometimes shorter than fourth; wing-tip usually equal to or longer than tarsus (decidedly shorter in *D. maculosa*, *D. discolor*, and *D. palmarum*). Tail about equal to distance from bend of wing to tips of secondaries (sometimes a little longer or shorter), emarginate, even, double-rounded or slightly rounded. Tarsus one-fourth<sup>2</sup> to one-third<sup>3</sup> as long as wing, its scutella indistinct, often obsolete or fused on outer side; middle toe, with claw, shorter than tarsus (nearly as long in *D. dominica*); basal phalanx of middle toe united for more than half (sometimes nearly the whole) its length to outer toe, for at least half its length to inner toe.

*Coloration*.—Extremely variable, but inner webs of lateral rectrices always with more or less of white or yellow.

*Nidification*.—Mostly arboreal, sometimes terrestrial or subterrestrial.

*Range*.—Whole of North and Middle America, and more northern and western portions of South America; Galapagos Islands. (Many species.)

There is much variation in details of form among the many species of this beautiful genus, and their habits vary correspondingly. Some

<sup>1</sup> *D. plumbea*, *D. pharetra*, *D. adelaidæ*, and *D. delicata*.

<sup>2</sup> In *D. coronata*, *D. vigorsii*, and *D. castanea*.

<sup>3</sup> In *D. plumbea*, *D. adelaidæ*, and *D. delicata*; nearly one-third as long in *D. palmarum*, *D. discolor*, and *D. maculosa*.

(for example, *D. rigorsii* and *D. dominica*) are expert creepers, recalling in their movements along the branches of trees the genus *Mniotilta*; others (as *D. palmarum*) keep much upon the ground, where they walk in the graceful manner of a Pipit, accompanying their movements by the same wagging of the tail and tilting or "teetering" motion of the body; some of them combine these characteristics to a greater or less degree, while others possess none of them to a pronounced extent. All are expert "flycatchers," when the occasion demands, but this is a trait shared by many groups of birds.

The bill of *D. tigrina* is peculiar in the decided attenuation and acuteness, as well as slight but very obvious downward curvature, of the tip, but I can not discover any other character wherein this species differs from other members of the genus. This species was separated by Professor Baird as the type of a new genus, *Perissoglossus*, through an error, the tongue of a Cœrebine bird (probably a species of *Cyanerpes*) having been examined, described, and figured as that of *D. tigrina*. This matter has been quite fully discussed by Mr. Lucas,<sup>1</sup> who finds "that while the tongues of the various species [of *Dendroica*] are constructed on the same plan, . . . there is great specific variation in the execution of details, the extremes, so far as I have examined, being marked by *Dendroica maculosa* and *D. tigrina*, and that while these extremes are widely separated, yet the gap between them is bridged over by other species which show intermediate stages."

*D. maculosa*, *D. discolor*, and *D. palmarum* are the only continental species in which the wing-tip is decidedly shorter than the tarsus, all the other species having the wing-tip at least as long as the tarsus. The first named (*D. maculosa*) is unique in having the ninth primary decidedly shorter than the sixth instead of equal to it or longer, and is

## KEY TO THE SPECIES AND SUBSPECIES OF DENDROICA.

- a. Inner webs of rectrices (except middle pair) partly yellow. ("Golden Warblers."<sup>1</sup>)
- b. No orange, rufous, or chestnut on sides of head or throat, or else the pileum also rufous or chestnut and chest and sides streaked with the same.
- c. Under parts bright yellow, the chest and sides streaked with chestnut or rufous. (Adult males.)
- d. Chin, throat, and sides of head yellow.
- e. Wing more pointed, the outermost (ninth) primary equal to or longer than sixth, often longest; tarsus shorter, never more than 20, averaging about 18.8; tail relatively shorter, averaging less than 48.5, or else wing averaging 68; continental. (*Dendroica aestiva*.)
- g. Larger (wing averaging more than 62, tail averaging more than 44) and brighter colored; pileum, in fully adult plumage, decidedly yellowish, often pure yellow, sometimes tinged with tawny orange; wing-coverts and tertials broadly edged with yellow; back, etc., lighter, more yellowish. olive-green.
- h. Back, etc., more decidedly olive-green, the upper tail-coverts with less yellow; chestnut streaks on chest and sides much broader.<sup>2</sup> (United States in general, except southern border from western Texas to Arizona; more southern British Provinces.)  
*Dendroica aestiva aestiva*, adult male (p. 508)
- hh. Back, etc., more yellowish olive-green, the upper tail-coverts with more yellow; chestnut streaks on chest and flank much narrower.

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<sup>1</sup> The so-called "Golden Warblers" (see Baird, Review of American Birds, p. 193) embrace numerous forms which at first sight seem to be easily arrangeable into three groups according to the color of the head in adult males: (1) Those without a sharply defined orange, rufous, or chestnut patch on the crown; (2) those with a sharply defined crown-patch of rufous or chestnut, and (3) those with the whole head, including the throat, rufous or chestnut. A careful examination, however, shows that no sharp line can be drawn between supposed groups 1 and 2, one form (*D. aureola*, of the Galapagos Archipelago and Cocos Island) being so clearly intermediate that different specimens would fall into either group. In short, there is, in various West Indian forms, including that from the island of Cozumel, every intermediate condition between the yellow or olive-green crown of *D. aestiva* (in which, itself, the crown is sometimes slightly tinged with orange) and the very sharply defined dark chestnut cap of *D. capitalis*. Furthermore, I fail to find other color characters which will serve to segregate the various forms into smaller groups, not a single one of those which have hitherto been used for that purpose and which at first sight give promise of utility in that way standing the test of careful examination of even a moderately large series of specimens. With adult females the case is still more difficult, there being in that sex a far greater range of individual variation and the color characters altogether less pronounced. The preparation of an infallible "key" to the various forms of these "Golden Warblers" the author therefore acknowledges to be beyond his ability, and he wishes it to be understood that the one here given, while rendering identification easy in the case of most specimens, may fail with others.

It is clearly evident that all these "Golden Warblers," with the exception, perhaps, of the little-known *D. coa*, are of common origin, and that many of them represent merely local forms or slightly differentiated subspecies; but where to draw the line between those which seem to be now specifically distinct and those which do not is a very difficult matter, regarding which probably no two authors would entirely agree.

<sup>2</sup> Except in some western specimens, which otherwise are like eastern ones.

- i. Smaller (wing averaging 63.3, tail 47.8). (Southwestern border of United States, from western Texas to Arizona, and southward into northwestern Mexico.)

*Dendroica aestiva sonorana*, adult male (p. 512)

- ii. Larger (wing averaging 68, tail 53). (Central Mexico.)

*Dendroica aestiva dugesi*, adult male (p. 513)

- gg. Smaller (wing averaging less than 62, tail averaging less than 49) and duller colored; pileum always olive-green, like back, rarely becoming yellowish on forehead; wing-coverts and tertials narrowly edged with yellowish olive-green or olive-yellow, back, etc., darker olive-green. (Vancouver Island to Alaska in summer, south to southern California, central Texas, and Nicaragua in winter.)

*Dendroica aestiva rubiginosa*, adult male (p. 514)

- cc. Wing more rounded, the outermost (ninth) primary decidedly shorter than sixth; tarsus longer, very rarely less than 20, averaging 20.9; tail relatively longer, averaging about 48.5. West Indian.<sup>1</sup>

- f. Larger (wing of adult male usually more than 60, averaging more than 61); pileum without a distinct patch of tawny, chestnut-tawny, or chestnut, or else wing 62 or more, averaging 65.4. (*Dendroica petechia*.)

- g. Pileum without a distinct patch of orange-ochraceous or tawny, or if pronouncedly thus colored the color not sharply defined nor strongly contrasted laterally against the yellow of the superiliary region; wing averaging not more than 65, usually much less.

- h. Lighter, brighter more yellowish olive-green above, the pileum usually more or less tinged with yellow, ochraceous, or tawny, sometimes mostly thus colored, yellowish wing-markings more distinct, more decidedly yellow, yellow of under parts deeper.

- i. Yellow of under parts less intense and chestnut streaks on chest and sides narrower or fewer.

- j. Wing longer (averaging 65) and bill smaller (exposed culmen averaging 10.6). (Island of Jamaica Haiti?)

*Dendroica petechia petechia*, adult male (p. 515)

- jj. Wings shorter (averaging 61.4) and bill larger (exposed culmen averaging 11.1). (Island of Grand Cayman.)

*Dendroica petechia auricapilla*, adult male (p. 517)

- nn. Yellow of under parts more intense, and chestnut streaks on chest and sides heavier or more numerous.

- j. Smaller (wing averaging 61, tail 47.9, exposed culmen 11, tarsus 20.5); chestnut streaks on chest and sides averaging narrower, crown more rarely tinged with ochraceous or tawny. (Bahamas.)

*Dendroica petechia flaviceps*, adult male (p. 517)

- jj. Larger (wing averaging 62.3, tail 49.1, exposed culmen 11.3, tarsus 21.3), chestnut streaks on chest and sides averaging heavier; crown more often tinged with ochraceous or tawny. (Islands of Porto Rico, Vieques, St. Thomas, Virgin Gorda, Anegada, St. Croix, Anguilla, St. Bartholomew, St. Eustatius, St. Christopher?, Barbuda, and Antigua.)

*Dendroica petechia bartholemica*, adult male (p. 518)

- hh. Darker and duller olive-green above, the pileum usually concolor with back, or nearly so (rarely distinctly tinged with yellow.

<sup>1</sup> Except one form on Cozumel Island, Yucatan, and one from the Galapagos Archipelago, Cocos Island, and contiguous coast of South America.

ochraceous, or tawny, yellowish wing-markings less distinct, more greenish; yellow of under parts paler. (Island of Cuba.)

*Dendroica petechia gundlachi*, adult male (p. 520)

- gg. Pileum with a distinct patch of tawny or rufous-chestnut, this sharply defined and very strongly contrasted laterally against the yellow of the superciliary region<sup>1</sup> (Galapagos Archipelago; Cocos Island, coast of Ecuador and Peru?)

*Dendroica petechia anreola*, adult male (p. 521)

- ff. Smaller (wing of adult male usually much less than 60, averaging less than 59); pileum with a very distinct patch of tawny, rufous-chestnut, or chestnut. (*Dendroica ruficapilla*.)

- g. Pileum tawny-ochraceous to deep tawny, the area thus colored not so sharply defined.

- h. Chest and sides more narrowly streaked with chestnut. (Islands of Guadeloupe and Dominica.)

*Dendroica ruficapilla ruficapilla*, adult male (p. 523)

- hh. Chest and sides much more heavily streaked with chestnut.

- i. Tawny of pileum deeper, covering forehead. (Island of Cozumel, Yucatan.) *Dendroica ruficapilla rufivertex*, adult male (p. 524)

- ii. Tawny of pileum paler, becoming more yellowish or changing to yellow on forehead. (Island of St. Andrews, Caribbean Sea.)

*Dendroica ruficapilla flava*, adult male (p. 524)

- gg. Pileum chestnut, the area thus colored sharply defined laterally and posteriorly.

- h. Pileum clear chestnut or rufous-chestnut; streaks on chest and sides paler chestnut. (Island of Curaçao, southern Caribbean Sea.)

*Dendroica ruficapilla rufipileata*, adult male (p. 525)

- hh. Pileum dark chestnut or bay; streaks on chest and sides darker chestnut. (Island of Barbados.)

*Dendroica ruficapilla capitalis*, adult male (p. 526)

- dd. Chin, throat, and sides of head, as well as pileum, chestnut or tawny.

- e. Back, etc., darker olive-green; wing, tail, and tarsus shorter, bill longer (wing 55.5-57, tail 40-43, tarsus 17-19, exposed culmen 11.5-12). (Island of Martinique, Lesser Antilles.) *Dendroica rufigula*, adult male (p. 526)

- ee. Back, etc., lighter, more yellowish, olive-green; wing, tail, and tarsus longer, bill shorter (wing not less than 60, tail not less than 45, tarsus averaging 20 or more, exposed culmen 11).

- f. Chest and sides heavily streaked with rufous-chestnut, the color of throat not sharply defined posteriorly (Isthmus of Panama and Caribbean coast of Colombia, Veragua?)

*Dendroica erithachorides*, adult male (p. 527)

- ff. Chest and sides very narrowly, if at all, streaked with darker chestnut, the rufous-chestnut color of throat sharply defined posteriorly. (*Dendroica bryanti*.)

- g. Head slightly lighter chestnut; chest and sides usually with more numerous or broader streaks; wing averaging 65.5, tail 50. (Atlantic coast of Central America, from Yucatan to Costa Rica.)

*Dendroica bryanti bryanti*, adult male (p. 529)

- gg. Head slightly darker chestnut, chest and sides with fewer or narrower streaks, wing averaging 63.2, tail 46.6. (Pacific coast of

<sup>1</sup> Males not in fully mature plumage have less of this color on the pileum, and are consequently not easily to be distinguished from those fully adult males of the preceding West Indian forms having the crown most highly colored.

Mexico and Central America, from Lower California and Sinaloa to Costa Rica.) *Dendroica bryanti castaneiceps*, adult male (p. 530)

- cc. Under parts duller yellow, usually without streaks, very rarely distinctly streaked. (Adult females and young.<sup>1</sup>)
  - bb. Sides of head, alone, or together with chin, throat, and chest, orange-tawny, the pileum olive-greenish or dusky grayish; chest and sides without streaks. (Jamaica.) ..... *Dendroica oca*, adults (p. 531)
  - aa. Inner webs of rectrices without any yellow.
  - b. Inner webs of lateral rectrices with a distinct patch or spot of white.
  - c. White on inner webs of rectrices on middle portion, present and of nearly equal extent on all but middle pair. (Eastern United States and British Provinces.)
- Dendroica maculosa* (p. 532)
- cc. White on inner webs of rectrices on terminal or subterminal portion (or else occupying greater part of the web), present on not more than three or four (very rarely five) rectrices and greatly decreasing in extent from the outermost.
  - d. Bill with tip acute, decurved; sides of neck yellow, or else rump yellowish olive or olive-yellowish, much brighter than the plain grayish olive back. (Eastern North America; West Indies in winter.)
- Dendroica tigrina* (p. 537)
- dd. Bill with its tip not acute nor decurved; sides of neck not yellow; rump not yellowish olive or olive-yellowish, different from color of back, or else the latter streaked with darker.
  - e. Wing without light colored bands or edgings, but (usually) with a white spot at base of primaries. (*Dendroica cerulea*.)
  - f. Upper parts dark grayish blue; sides of head, throat, and sides black; rest of under parts white.
  - g. Back dark grayish blue, like rest of upper parts (rarely with slight admixture of black) (Eastern North America, breeding from mountains of Pennsylvania northward.)

*Dendroica cerulea cerulea*, adult male (p. 541)

- gg. Back mostly black or spotted or clouded with black. (Mountains

- America in general, chiefly eastward and northward; West Indies in winter.) ..... **Dendroica coronata** (p. 546)
- hh. Throat yellow (rarely white or but faintly tinged with yellow in immature females); four to five lateral rectrices with a white subterminal spot on inner web. (*Dendroica auduboni*.)
- i. Smaller (wing averaging 77.3 in male, 75.4 in female, tail 58.3 in male, 56.7 in female); adult male with forehead, sides of head and back mostly gray, and black on chest and sides of breast less extensive, more or less broken by whitish margins to feathers; adult female less heavily streaked with black on upper parts, sides, and flanks. (Western North America, south into Mexico in winter.) .. **Dendroica auduboni auduboni** (p. 551)
- ii. Larger (wing averaging more than 80 in males, more than 76 in females); adult male with forehead and sides of head black, back mostly black, and black on chest and sides of head more extensive, unbroken; adult females more heavily streaked on upper parts, sides, and flanks.
- j. Smaller (wing averaging 80.5, tail 62, in male); sides of occiput, sides of neck, and hindneck gray streaked with black; white nuchal spot and white spot on sides of lower throat smaller or wanting. (Southern Arizona and northwestern Mexico.)  
**Dendroica auduboni nigrifrons**, adult male (p. 555)
- jj. Larger (wing 82.8, tail 66.3, in male); sides of occiput, sides of neck, and hindneck uniform black; white nuchal spot and white spots on sides of lower throat larger. (Highlands of Guatemala.) .. **Dendroica auduboni goldmani**, adult male (p. 556)
- gg. No yellow spot on rump nor sides of breast.
- h. Throat and chest black or partly black.
- i. Whole auricular region black, gray, or olive.
- j. Back and rump gray; superciliary and malar stripes and breast white.
- k. Pileum, auricular and malar regions, throat, and chest black. (Western United States.)  
**Dendroica nigrescens**, adult male (p. 556)
- kk. Pileum streaked gray and black; auricular region gray; throat and chest only partly black (otherwise white).  
**Dendroica nigrescens**, adult female (p. 557)
- jj. Back and rump olive-green; superciliary and malar stripes and breast yellow.
- k. Pileum, auricular region, throat, and chest black. (Western North America, south to Guatemala in winter.)  
**Dendroica townsendi**, adult male (p. 559)
- kk. Pileum streaked black and olive-green; auricular region olive-green; throat and chest only partly black (otherwise yellow) ... **Dendroica townsendi**, adult female (p. 560)
- ii. Auricular region mostly yellow.
- j. A black, dusky, or olive postocular streak; back and rump black or olive-green; black of chest extended laterally over sides of breast; pileum plain olive-green, plain black, or streaked olive-green and black.
- k. Pileum and back plain olive-green; breast and abdomen yellowish white or pale yellow.
- l. Throat and chest uniform black.  
**Dendroica virens**, adult male (p. 562)

h. Throat and chest only partly black.

*Dendroica virens*, adult female (p. 562)

kk. Pileum and back plain black or streaked olive-green and black; breast and abdomen pure white.

l. Pileum and back uniform black; throat and chest uniform black. (Texas to Guatemala.)

*Dendroica chrysoparia*, adult male (p. 565)

H. Pileum and back streaked olive-green and black; throat and chest (usually) only partly black.

*Dendroica chrysoparia*, adult female and immature male (p. 566)

jj. No black, dusky, or olive postocular streak, the sides of head entirely yellow; back and rump gray, the former streaked or spotted with black; black of chest with convex posterior outline; pileum at least partly yellow. (Western United States and British Columbia, south to Guatemala in winter.)

*Dendroica occidentalis*, adult male (p. 567)

hh. Throat without any black.

i. Wing with two distinct bands (across tips of middle and greater coverts, respectively) of white, yellowish, or pale gray—or else with these coalesced into a single large patch.

j. Upper parts light grayish blue. (Eastern United States; south in winter to northern South America.)

*Dendroica rara*, adult male (p. 570)

jj. Upper parts not light grayish blue.

k. A superciliary stripe of white, yellow, or buff.

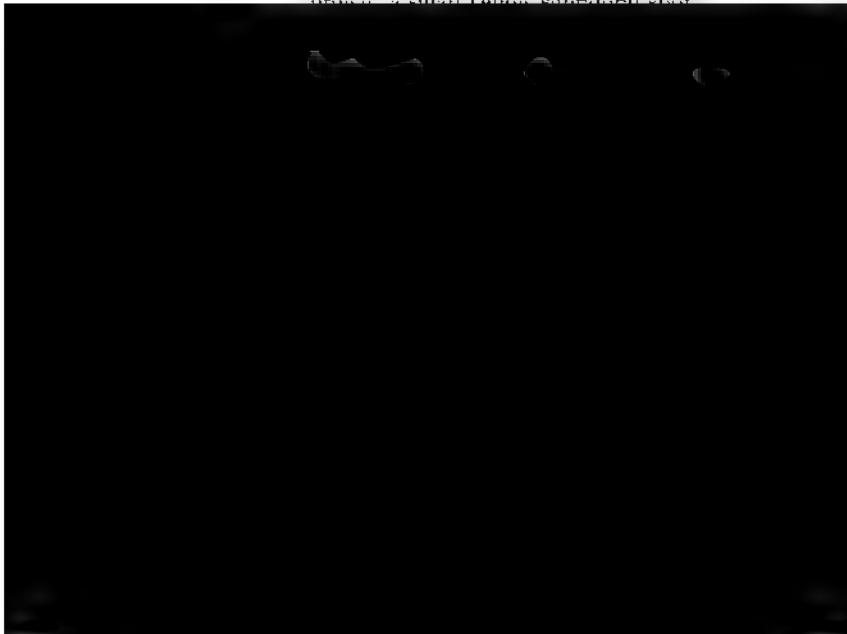
l. Throat white or pale olive-yellowish; sides of head without yellow.<sup>1</sup>

m. Back and auricular region greenish or bluish; no yellow supraloral spot.

*Dendroica rara*, adult female and immature male (p. 570)

mm. Back and auricular region brownish gray or grayish

brown; a small yellow supraloral spot.





- q.* Back streaked with black, pale yellowish (or dull whitish) and olive; throat and chest yellow or pale orange.

***Dendroica blackburniae***, adult female  
and immature male (p. 575)

- qq.* Back light olive-brownish indistinctly streaked with dusky; throat and chest pale yellowish buff.....***Dendroica blackburniae***, immature female (p. 575)

- nn.* Back gray (with or without black streaks) or plain grayish brown.

- o.* Superciliary stripe white, extending to end of auricular region; sides of neck white; auricular region mostly black. (*Dendroica dominica*.)

- p.* Bill larger (exposed culmen averaging 13.8 in male, 12.9 in female); superciliary stripe usually yellow anteriorly. (Atlantic coast of United States, chiefly south of New Jersey; Florida and West Indies in winter.)

***Dendroica dominica dominica***, adults (p. 578)

- pp.* Bill smaller (exposed culmen averaging 11.9 in male, 11.7 in female); superciliary stripe usually entirely white. (Mississippi Valley; south in winter through Mexico to Nicaragua.)

***Dendroica dominica albilora***, adults (p. 582)

- oo.* Superciliary stripe yellow, extending but little, if any, beyond eye; sides of neck and auricular region gray.

- p.* Yellow of under parts extending no farther backward than upper breast. (*Dendroica graciae*.)

- q.* Larger (wing averaging 65.1 in male, 61 in female); superciliary stripe whitish at posterior extremity; yellow of chest not invading breast. (Northwestern Mexico to Arizona and Colorado.)

***Dendroica graciae graciae***, adults (p. 584)

- qq.* Smaller (wing averaging 57 in male); superciliary stripe shorter, wholly yellow; yellow of chest invading breast. (Southern Mexico to southern Honduras.)

***Dendroica graciae decora***, adults (p. 586)

- pp.* Yellow of under parts extending over breast and abdomen.

- q.* Wing and tail shorter (averaging 54 and 42.3, respectively, in male); superciliary stripe narrower anteriorly, not encroaching on forehead; less black on sides of crown; colors less intense. (Porto Rico, Greater Antilles.)

***Dendroica adelaidae***, adults (p. 587)

- qq.* Wing and tail longer (averaging 56 and 51, respectively, in male); superciliary stripe broader anteriorly, occupying sides of forehead; more black on sides of crown; gray of back, etc., clearer, and yellow of under parts

etc., more intense. (Santa Lucia, Lesser Antilles.)...*Dendroica delicata*, adults (p. 588)

kk. No superciliary stripe of white, yellow, or buff.<sup>1</sup>

l. Back more or less streaked (the streaks sometimes concealed); wing-bands white or pale yellow.

m. Sides of crown (at least behind eyes) black.

n. Sides chestnut; pileum not wholly black.

o. Crown olive-yellow; auricular region, throat, and chest white. (Eastern North America, south in winter to Bahamas and Isthmus of Panama.)

*Dendroica pensylvanica*, adults (p. 589)

oo. Crown chestnut; auricular region black; throat and chest chestnut. (Eastern North America, south in winter to Colombia.)

*Dendroica castanea*, adult male (p. 592)

mm. Sides white, streaked with black; pileum wholly black. (Northern and eastern North America, south over most of South America in winter.)

*Dendroica striata*, adult male (p. 595)

nn. Sides of crown not black.

o. Under tail-coverts white.

p. Sides of head, sides, and flanks plain pale ash gray (the flanks sometimes tinged with chestnut).

*Dendroica pensylvanica*, immature (p. 590)

oo. Sides of head, sides, and flanks light olive or else distinctly streaked.

*Dendroica striata*, immature (p. 596)

nn. Under tail-coverts pale buff.

*Dendroica castanea*, adult female and immature (p. 592)

ll. Back plain olive-green, olive, or grayish olive; wing-bands pale gray or dull grayish white. (*Dendroica nigra*.)

m. Under parts with at least the anterior half yellow; a yellow supraloral streak; upper parts olive-green.

nn. Wing-bands yellowish; tail-bands dull and not streaked.

yellow on chest (rarely with anterior half pale yellow); no yellow supraloral line; upper parts dull olive or grayish olive.

- n.* Wing longer (averaging 68.4), bill and feet smaller (exposed culmen averaging 10.6, tarsus 18.2, middle toe 12.4).

***Dendroica vigorsii vigorsii***, adult female (p. 599)

- nn.* Wing shorter (averaging 62.5), bill and feet larger (exposed culmen averaging 12.2, tarsus 19.2, middle toe 13.2).

***Dendroica vigorsii achrustera***, adult female (p. 602)

- ii.* Wings with not more than one distinct band, this (if present) across tips of middle coverts, and yellowish.
- j.* Back streaked with black; a whitish orbital ring (interrupted anteriorly); tarsus 21 to 23. (Eastern United States; Bahamas in winter.) ..... ***Dendroica kirtlandii***, adults (p. 603)
- jj.* Back not streaked with black; no whitish orbital ring; tarsus less than 21.
- k.* Upper parts plain gray, becoming olive-green on forehead and crown; under parts, except throat and chest, grayish white. (*Dendroica pityophila*.)
- l.* Gray of upper parts lighter; forehead and crown yellowish olive-green. (Cuba.)

***Dendroica pityophila pityophila***, adults (p. 605)

- ll.* Gray of upper parts darker; forehead and crown "greenish-yellow, showing light yellow at base of upper mandible." (Abaco and Great Bahama islands, Bahamas.)

***Dendroica pityophila bahamensis***, adults (p. 606)

- kk.* Upper parts not gray; under parts not grayish white.
- l.* Middle wing-coverts tipped with yellow or pale yellowish gray, forming a distinct band; pileum plain olive-green.
- m.* Sides and flanks streaked with black or dusky.
- n.* Back spotted with chestnut; sides of head with black markings; under parts rich yellow, with broad black streaks on sides. (Eastern United States; West Indies in winter.)

***Dendroica discolor***, adult male (p. 607)

- nn.* Back plain dull olive-green, or with only faint indications of chestnut; sides of head with indistinct grayish or dusky markings; under parts dull or pale yellow, with grayish streaks on sides.

***Dendroica discolor***, adult female (p. 607)

- mm.* Sides and flanks not streaked.
- n.* Above plain bright olive-green, beneath rich yellow. (Islands of Grand Cayman and Swan Island, Caribbean Sea.) ..... ***Dendroica vitellina***, adults (p. 610)
- nn.* Above dull olive-green (sometimes partly gray), beneath pale yellow.

***Dendroica vitellina***, immature (p. 611)

- ll.* Middle wing-coverts not tipped with yellow or pale yellowish gray; <sup>1</sup> pileum not plain olive green. (*Dendroica palmarum*.)

<sup>1</sup> The middle wing-coverts have a more or less distinct terminal *margin* of grayish, it there is no approximation to a distinct bar.

*m* Crown chestnut.

- n* Under parts of body partly whitish, smaller (wing averaging 64.5 in male, 60.7 in female). (Mississippi Valley and interior British Provinces, through Gulf States to West Indies in winter.)

*Dendroica palmarum palmarum*, adults (p. 612)

- mm* Under parts entirely yellow; larger (wing averaging 67.1 in male, 64.1 in female). (Atlantic States and eastern British Provinces, south in winter to northern Florida and through Gulf States to Louisiana.)

*Dendroica palmarum hypochrysea*, adults (p. 615)

- mm* Crown olive-grayish, streaked with dusky.

- n* Under parts mostly dull whitish; smaller.

*Dendroica palmarum palmarum*, immature (p. 612)

- nn* Under parts entirely yellow, larger.

*Dendroica palmarum hypochrysea*, immature (p. 615)

- ff* White spot on inner web of lateral rectrices small, not extending to shaft.

- g* Above plain slate, relieved by a white superciliary streak and two white wing-bars; beneath white medially, slate-gray laterally. (Islands of Dominica and Guadeloupe, Lesser Antilles.)

*Dendroica plumbea*, adults (p. 617)

- gg* Above plain olive, with superciliary streak and wing-bars pale olive-yellowish or yellowish white, beneath pale olive-yellowish medially, pale olive laterally. . . . . *Dendroica plumbea*, immature (p. 617)

- bb* Inner webs of lateral rectrices without white spots.<sup>1</sup>

- c* Pileum and back streaked with black and whitish; beneath white marked (except on abdomen and under tail-coverts) with wedge-shaped streaks of black (Jamaica.) . . . . . *Dendroica pharettra*, adults (p. 618)

- cc* Pileum and back plain olive, beneath pale olive-yellowish, absolutely streaked, anteriorly and laterally, with pale olive.

*Dendroica pharettra*, immature (p. 618)

# **DENDROICA ÆSTIVA ÆSTIVA (Gmelin).**

## **YELLOW WARBLER.**

*Adult male*.—General color above clear yellowish olive-green, the pileum more yellowish, usually clear yellow on forehead and at least anterior portion of crown, often tinged with orange-tawny; upper tail coverts edged with yellow; back sometimes streaked with chestnut; wings and tail dusky, the middle wing coverts broadly tipped with yellow, the greater wing-coverts and tertials broadly edged with the same; remiges (except tertials) more narrowly edged with yellowish olive-green; inner webs of rectrices yellow, tipped with dusky; sides of head and under parts clear rich yellow, the chest, sides, and flanks streaked with chestnut; bill blackish (in dried skins) with paler tomia; iris brown; legs and feet light brownish (in dried skins); length (skins), 100–125 (111.5); wing, 60–71 (62.5); tail, 42–53 (44.4); exposed culmen, 10–11 (10.1); tarsus, 17–20 (18.6); middle toe, 10–12 (11).<sup>2</sup>

<sup>1</sup>There is a more or less distinct white terminal margin, but no approach to the form of a spot.

<sup>2</sup>Thirty-two specimens.

*Adult female*.—Above plain yellowish olive-green (usually darker than in adult male), the pileum concolor with the back, or at least not distinctly more yellowish; wings and tail as in adult male, but tips of middle wing-coverts and broad edgings of greater coverts and secondaries less purely yellow, usually yellowish olive-green; under parts paler and duller yellow than in adult male, usually without streaks, but sometimes with a few, usually indistinct, chestnut streaks on chest and sides; length (skins), 102–111 (108.7); wing, 57–68 (59.6); tail, 39–45 (42.2); exposed culmen, 10–11 (10); tarsus, 17–20 (18.6); middle toe, 10–12 (10.8).<sup>1</sup>

*Young male in first autumn*.—Very similar in coloration to adult females.

*Young female in first autumn*.—Similar to duller colored adult females, but duller olive-green above and with under parts dull olive-whitish, slightly tinged with yellow, the under tail-coverts pale yellow.

*Young (nestling)*.—Above brownish gray or pale grayish brown; wings dusky, the middle and greater coverts broadly tipped with pale yellowish, forming two distinct bands, the greater and primary coverts edged with light olive, the remiges more narrowly and sharply edged with yellowish white; orbital ring, chin, throat, chest, and anterior portion of sides pale buffy grayish, the remaining under parts white, tinged on flanks with pale buff.

North America in general, except Alaska and north Pacific coast from Vancouver Island northward, and southwestern United States (western Texas to Arizona); migrating southward in winter through eastern Mexico and Central America to Colombia (Turbo, Santa Marta, Ocaña, Bogota, etc.), Ecuador (Esmeraldas, La Concepcion, Valle del Chota, etc.), Venezuela (Carúpano, Lake of Valencia, etc.), northern Brazil

<sup>1</sup> Seventeen specimens.  
I am not able to make out satisfactorily a western form (*D. æ. morcomi* Coale). Western specimens seem, as a rule, to have shorter wings and longer tail than eastern examples, and adult males are often much less heavily streaked beneath; but the differences appear much too inconstant to justify recognition of a western subspecies. Average measurements are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
MALES.					
Nine adult males from Atlantic States.....	63	45.4	10.2	18.6	11.1
Seven adult males from Mississippi Valley.....	63.2	44.2	10.2	18.7	11
Eight adult males from Rocky Mountain district.....	62.8	46.4	10	18.8	11
Eight adult males from California .....	61.1	46	10.1	18	10.8
FEMALES.					
Eight adult females from Atlantic States .....	58.7	41.2	10	18.5	10.8
Three adult females from Mississippi Valley.....	62.3	42	10	18	10.6
Four adult females from Rocky Mountain district.....	59.7	44.2	10.2	19.6	11
Two adult females from California.....	59	43	10	19	10.5

(Forte do S. Joaquim, Rio Tacutu, etc.), Trinidad, and Grenada (one specimen, November 14, 1882, in U. S. National Museum collection). No certain record from West Indies, except Grenada, but doubtfully credited to Bahamas and Cuba.

*Motacilla canadensis* (not of Linnaeus) BODDART, Tabl. Pl. Enl., 1783, 4 (based on *Figuer de Canada* Daubenton, Pl. Enl., pl. 58, fig. 2).

[*Motacilla*] *astura* Gmelin, Syst. Nat., i, pt. ii, 1788, 906 (based on *Figuer de Canada* Daubenton, Pl. Enl., pl. 58, fig. 2).—LESSON, Traité d'Orn. 1831, 418.

[*Sylvia*] *astura* LATHAM, Index Orn., ii, 1790, 551.

*Sylvia astura* Vieillot, Ois. Am. Sept., ii, 1807, 35, pl. 95; Nouv. Dict. d'Hist. Nat., xi, 1817, 225, Enc. Méth., ii, 1823, 429.—STEPHENS, Shaw's Gen. Zool., x, 1817, 750.—BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 83.—AUDUBON, Orn. Biog., i, 1831, 476, pl. 95.—NETTALL, Man. Orn. U. S. and Canada, i, 1832, 370.—LEMBEYE, Aves de la Isla de Cuba, 1850, pl. 6, fig. 3 (not the text, which = *D. gundlachi* Baird).

*Sylvia astura* TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, 153 (Columbia R.).

*Sylvia astura* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 211.—JARDINE, ed. Wilson's Am. Orn., i, 1832, 258.—BONAPARTE, Geog. and Comp. List, 1838, 23.—AUDUBON, Synopsis, 1839, 57, 58, Birds Am., oct. ed., ii, 1841, 50, pl. 88.—NETTALL, Man. Orn. U. S. and Can., 2d ed., 1840, 417.—WOODHOUSE, Rep. Sitgreaves' Exp. Zuni and Colorado R., 1853, 79, Texas and Indian Territory.—MAXIMILIAN, Journ. fur Orn., vi, 1858, 14 (upper Missouri R.).—FISCH, Proc. Zool. Soc. Lond., 1870, 564 (Trinidad).

*M[otacilla] astura* GRAY, Gen. Birds, i, 1848, 196.

[*Motacilla*] *astura* GRAY, Hand-list, i, 1869, 240, no. 3475.

*Motacilla astura* LEONARD, Ois. Trinidad, 1866, 176.

[*Rhinamphus*] *asturus* CABANIS, Mus. Hein., i, 1850, 19 (Venezuela; North Am.).

[*Rhinamphus*] *astura* BONAPARTE, Conspect. Av., i, 1850, 311.

*Rhinamphus asturus* SLATER, Proc. Zool. Soc. Lond., 1855, 143 (Bogota, Colombia), 1856, 141 (David, Chiriqui); 1857, 202 (Jalapa and San Andres Tuxtla, Vera Cruz).—CABANIS, Journ. fur Orn., 1860, 326 (Costa Rica).

*Dendroica astura* BAIRD, Rep. Pacific R. R. Surv., iv, 1858, 282, part, Cat. N. Am. Birds, 1859, no. 203, part; Review Am. Birds, 1865, 195, part.—HEERMANN, Rep. Pacific R. R. Surv., x, 1859, 40 (California).—XANTUS, Proc. Ac. Nat. Sci. Phila., xi, 1859, 191 (Fort Tejon, California).—BREWER, Proc. Bost. Soc. N. H., vii, 1859, 21 (describ. nests).—SALVIN and SLATER, Ibis, 1859, 11 (Guatemala).—COOPER and SECKLEY, Rep. Pacific R. R. Surv., xii, pt. 2, 1860, 181 (Washington and Oregon).—CASSIN, Proc. Ac. Nat. Sci. Phila., xii, 1860, 191, 92 (Turbo, Colombia).—BLAKISTON, Ibis, 1862, 4 (Forks of Saskatchewan).—LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 175 (David, Chiriqui), 180 (Greytown, Nicaragua), viii, 1866, 284 (New York City).—FRANTZUS, Journ. fur Orn., 1869, 293 (San José, Costa Rica).—SEMICHAIST, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, etc., winter).—HOLDEN, Proc. Bost. Soc. N. H., vi, 1872, 197 (Wyoming).—RIDGWAY, Bull. Essex Inst., v., 1873, 180 (Colorado).—Orn. Illinois, i, 1880, 137.—MERRIAM, Rep. U. S. Geol. Surv. Terr., i, 1873, 675, 705, 713 (Ogden, etc., Utah).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 222, part, pl. 14, fig. 1.—YARROW and HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 10 (Provo, Utah).—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 41 (Utah), 58 (Denver, Colorado), 74 (Fort Garland, Colorado, describ. nests), 102 (New Mexico), Zool. Exp. W. 100th Merid., 1875, 192 (Nevada, Utah, Colorado).—TURNER, Proc. U. S. Nat. Mus., viii, 1885, 237 (Fort George, Hudson Bay).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 652, part.—CORY, Auk, ii,



1886, 29 (Cuba ?; Bahamas ?); Birds W. I., 1889, 43; Cat. W. I. Birds, 1892, 123.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 137 (Chietla, Puebla, Dec.).—COOKE, Bird Migr. Miss. Val., 1888, 244 (dates of migr., etc.).—SCOTT, Auk, vii, 1890, 18 (Tarpon Springs, Florida, breeding).—CHERRIE, Auk, vii, 1890, 335 (San José, Costa Rica, winter, and until May 11); viii, 1891, 279, part only ? (Costa Rica; remarks on plumage).—PALMER (W.), Proc. U. S. Nat. Mus., xiii, 1890, 265 (St. Johns, Newfoundland).—MERRIAM, N. Am. Fauna, no. 5, 1891, 105 (Idaho).—(?) MACFARLANE, Proc. U. S. Nat. Mus., xiv, 1891, 444, part (entire wooded region of Arctic North America).—ALLEN, Bull. Am. Mus. N. H., iv, 1892, 51 (Carúpano, Venezuela, Nov.); xiii, 1900, 177 (Bonda, Prov. Santa Marta, Colombia, Aug. 27 to Jan. 31); Auk, xvii, 1900, 366 (do.).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484, part (Rio Escondido, Nicaragua, Aug. 9 to late in Feb.).—NEHRLING, Our Native Birds, etc., i, 1893, 198, pl. 15, fig. 1.—CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 24 (Trinidad).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 143 (Santa Marta, Colombia).—GRINNELL, Pub. ii, Pasadena Ac. Sci., 1898, 45 (Los Angeles Co., California, summer resid.).—MERRILL, Auk, xv, 1898, 18 (Fort Sherman, Idaho).—BEYER, Proc. Louis. Soc. Nat., 1897-99 (1900), 112 (Louisiana, breeding).

*Dendroica aestiva* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz); 1864, 172 (near City of Mexico); Cat. Am. Birds, 1862, 32 (Esmeraldas, w. Ecuador; Cayenne; Trinidad; Colombia).—LAWRENCE, Am. Lyc. N. Y., vii, 1861, 322 (Panama R. R.); ix, 1868, 94 (San José, Costa Rica); ix, 1869, 200 (Merida, Yucatan).—BLAKISTON, Ibis, 1863, 63 (interior British America).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Panama R. R.); 1869, 251 (Lake Valencia, Venezuela); 1870, 836 (San Pedro, Honduras); 1879, 494.—TAYLOR, Ibis, 1864, 81 (Trinidad).—COUES, Proc. Ac. Nat. Sci. Phila., 1866, 69 (Fort Whipple, Arizona); Check List, 1873, no. 70, part; 2d ed., 1882, no. 111, part; Birds N. W., 1874, 54, part, 232 (Colorado, up to 6,500 ft.); Birds Col. Val., 1878, 252, part.—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Bugabá, Cordillera del Chucu, Chitra, Calobre, Calovevora, and Santa Fé, Veragua); 1870, 183 (Veragua); Ibis, 1888, 247 (Holbox and Mugeris islands, Yucatan; Ruatan I., Honduras).—COOPER, Orn. Cal., 1870, 87.—WYATT, Ibis, 1871, 322 (Ocaña, Colombia).—PELZELN, Orn. Bras., 1871, 71 (Forte do S. Joaquim, Rio Tacutu, n. Brazil).—ALLEN, Am. Nat., vi, 1872, 265, 345, in text (near Denver, Colorado), 396, in text (Salt Lake Valley, Utah); Bull. Mus. Comp. Zool., iii, 1872, 175 (e. Kansas; Denver, etc., Colorado; Cheyenne, Wyoming; Ogden, Utah); Proc. Bost. Soc. N. H., xvii, 1874, 52 (Upper Missouri and Yellowstone rivers).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Barrio, Chihuitan, and Santa Efigenia, Oaxaca; Guichicóvi, Chiapas).—RIDGWAY, Orn. 40th Parallel, 1877, 431 (Sacramento, California; localities in Nevada and Utah); Nom. N. Am. Birds, 1881, no. 93, part.—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (San José, Costa Rica, Jan., Mar.).—BELDING, Proc. U. S. Nat. Mus., i, 1879, 404 (Calaveras Co., California).—CORY, Birds Bahama Is., 1880, 56 (Bahamas?).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 124, part; Ibis, 1880, 117 (Minca, Colombia, 2,000 ft. alt.).—NUTTING, Proc. U. S. Nat. Mus., v, 1883, 499 (San José, Costa Rica, Mar.).—BICKNELL, Auk, i, 1884, 212 (song).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 273, 644, part.

[*Dendroica*] *aestiva* COUES, Key N. Am. Birds, 1872, 97, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9, part.

*D[endr]roica aestiva* COUES, Key N. Am. Birds, 2d ed., 1884, 298, part.

*Dendroeca aestiva* SUNDEVALL, Öfv. k. Vet.-Ak. Forh. Stockh., xxvi, 1870, 606 (monogr.).

- [*Sylvia*] *carolinensis* LATHAM, Index Orn., ii, 1790, 551 (= young; based on *Figura de la Caroline* Daubenton, Pl. Enl., pl. 58, fig. 1).
- [*Motacilla*] *carolinensis* TURTON, Syst. Nat., i, 1806, 615.
- Mniotilta* ? *carolinensis* GRAY, Gen. Birds, i, 1848, 196.
- Sylvia flara* VIEILLIOT, Ois. Am. Sept., ii, 1807, 31, pl. 89 (= female; U. S. during migrations); Nouv. Dict. d'Hist. Nat., xi, 1817, 196; Enc. Méth., ii, 1823, 455.—LESSON, Traité d'Orn., 1831, 418.
- Sylvia citreola* WILSON, Am. Orn., ii, 1810, 111, pl. 15, fig. 6 ("fig. 5" in text, c. Pennsylvania; coll. Peale Mus.).—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 190.
- (?) *Rhuanamphus citrinus* RAFINESQUE, Journ. de Phys., lxxxviii, 1819, 417 (Kentucky).
- Sylvia childreni* AUDUBON, Orn. Biog., i, 1831, 180, pl. 35 (near Jackson, Louisiana).
- Sylvia childreni* NUTTALL, Man. Orn. U. S. and Canada, i, 1832, 370.
- Sylvia rathbonia* AUDUBON, Orn. Biog., i, 1831, 333, pl. 65 (Mississippi?).
- Sylviola rathbonia* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List, 1838, 23.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 447.
- Sylviola rathbonia* AUDUBON, Synopsis, 1839, 58; Birds Am., oct. ed., ii, 1841, 53, pl. 89.
- M[niotilta]* *rathbonia* GRAY, Gen. Birds, i, 1848, 196.
- [*Rhuanamphus*] *rathbonia* BONAPARTE, Conspectus, i, 1850, 311.
- "*Rhuanamphus chrysolaus* Bp. 'Bull. Soc. Linn. Caen., ii, 1831, 32 (Cayenne)'"
- Sylvia trochilus* (not of Scopoli, 1769, ex *Motacilla trochilus* Linnaeus) NUTTALL, Man. Orn. U. S. and Can., i, 1832, 406.
- Dendroica aestiva morcomi* COALE, Bull. Ridgway Orn. Club, no. 2, Apr., 1887, 2 (Fort Bridger, Wyoming; coll. U. S. Nat. Mus.).—RIDGWAY, Man. N. Am. Birds, 1887, 593, part.—MERRILL, Auk, v, 1888, 361 (Fort Klamath, Oregon).
- [*Dendroica*] *aestiva morcomi* RIDGWAY, Man. N. Am. Birds, 1887, 494, part.
- (?) *Dendroica morcomi* SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, 1899, 8 (La Concepcion and Valle del Chota, centr. Ecuador, Apr.).
- Dendroica petechia* (not *Motacilla petechia* Linnaeus) WELLS, Proc. U. S. Nat. Mus.,



*Adult female*.—Length (skins), 110–116 (113.2); wing, 57–61 (58.6); tail, 42–45 (43.2); exposed culmen, 10; tarsus, 18.5–19 (19); middle toe, 9.5–10.5 (10).<sup>1</sup>

Western Texas (Frontera, Fort Hancock, etc.), southern New Mexico, southern Arizona, and southward into Chihuahua, Sonora, and other parts of northwestern Mexico; in winter, southward to Guatemala (Naranjo), Nicaragua (Greytown), etc.

(?) *Sylvicola æstiva* (not *Motacilla æstiva* Gmelin?) HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 309 (New Mexico).

*Dendroica æstiva* (not *Motacilla æstiva* Gmelin) BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 282, part (Frontera, Texas); Rep. U. S. and Mex. Bound. Surv., ii, pt. ii, 1859, 10 (Frontera); Cat. N. Am. Birds, 1859, no. 203, part; Review Am. Birds, 1865, 195, part (Mazatlan; Colima).—(?) HENRY, Proc. Ac. Nat. Sci. Phila., xi, 1859, 106 (New Mexico).—(?) BUTCHER, Proc. Ac. Nat. Sci. Phila., xx, 1868, 149 (Laredo, Texas).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 222, part.—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269 (Mazatlan; Colima).—BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 137 (Chiricahua Mts., Arizona).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 652, part.—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484, part (Rio Escondido, Nicaragua, winter).

[*Dendroica*] *æstiva* COUES, Proc. Ac. Nat. Sci. Phila., 1868, 83 (Camp Grant, Arizona).

[*Dendroica*] *æstiva* COUES, Key N. Am. Birds, 1872, 97, part.

*Dendroica æstiva* COUES, Ibis, 1865, 159, in text (Los Piños, New Mexico); Check List, 1873, no. 70, part; 2d ed., 1882, no. 111, part; Birds N. W., 1874, 54, part; Birds Col. Val., 1878, 252, part.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 93, part.—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269 (Mazatlan; Colima).—SALVIN and GODMAN, Biol. Centr. Am., Aves, i, 1880, 124, part.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 93, part.—(?) SHARPE, Cat. Birds Brit. Mus., x, 1885, 644, part (Presidio, near Mazatlan, Mexico).

*D[endræca] æstiva* COUES, Key N. Am. Birds, 2d ed., 1884, 298, part.

*D[endroica] æstiva morcomi* (not of Coale) RIDGWAY, Man. N. Am. Birds, 1887, 494, part.

*Dendroica æstiva* [*morcomi* . . . ] SCOTT, Auk, v, 1888, 34 (Catalina Mts., s. Arizona, breeding up to 4,500 ft.).—ALLEN, Auk, v, 1888, 34 (Catalina Mts.; crit.).

*Dendroica æstiva morcomi* NELSON, N. Am. Fauna, no. 14, 1899, 56 (Tres Marias Islands, May).

*Dendroica æstiva sonorana* BREWSTER, Auk, v, Apr., 1888, 137 (Oposura, Sonora, Mexico; coll. W. Brewster).—JOUY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (Cuernavaca, Morelos, Aug. 19).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 2d ed., 1895, no. 652a.—RIDGWAY, Man. N. Am. Birds, 2d ed., 1896, 608.—ALLEN, Bull. Am. Mus. N. H., v, 1893, 40 (Bisbee, s. e. Arizona; San Diego, Chihuahua).

#### DENDROICA ÆSTIVA DUGESI (Coale).

##### DUGES' YELLOW WARBLER.

Similar to *D. æ. sonorana*, but decidedly larger; adult male without streaks on back<sup>2</sup> and adult female duller, more grayish in color.

<sup>1</sup> Nine specimens.

<sup>2</sup> Only three specimens having been examined, this character may prove inconstant.

*Adult male*.—Length (skins), 119–137 (128); wing, 66–71 (68); tail, 50–56 (53); exposed culmen, 9–11 (10); tarsus, 20; middle toe, 11–13 (11.3).<sup>1</sup>

*Adult female*.—Length (skins), 111–117 (114.6); wing, 62–66 (64.3); tail, 48–50 (48.6); exposed culmen, 10; tarsus, 20; middle toe, 11.<sup>1</sup>

Central Mexico, in States of Guanajuato (Moro Leon), Tlaxcala (Apixaco), Michoacan (Patzcuaro), and Morelos (Cuernavaca).

*Dendroica dugesi* COALE, Bull. Ridgway Orn. Club, no. 2, Apr., 1887, 83 (Moro Leon, Guanajuato, Mexico; coll. U. S. Nat. Mus.).

*D[endroica] dugesi* RIDGWAY, Man. N. Am. Birds, 1887, 495.

#### DENDROICA AESTIVA RUBIGINOSA (Pallas).

##### ALASKAN YELLOW WARBLER.

Similar to *D. a. aestiva*, but slightly smaller and much duller in color. Adult male darker and duller olive-green above, the pileum concolor with the back or else becoming slightly more yellowish on forehead (very rarely distinctly yellowish on forehead and fore part of crown); wing-edgings less conspicuous, mostly yellowish olive-green, sometimes inclining to yellow on greater coverts. Adult female darker and duller olive-greenish above, duller yellow below.

*Adult male*. Length (skins), 102–113 (108.6); wing, 61–63 (61.9); tail, 40–46 (43.1); exposed culmen, 10; tarsus, 17–19 (18); middle toe, 11.<sup>2</sup>

*Adult female*.—Length (skins), 99–110 (106); wing, 57–62 (59.2); tail, 41–44 (43.2); exposed culmen, 10; tarsus, 17–19 (18); middle toe, 10–11 (10.8).<sup>3</sup>

Alaska in general, both along the coast and throughout interior, and southward to Vancouver Island; migrating southward to southern

*D[endroica] æstiva* RIDGWAY, Man. N. Am. Birds, 1887, 494, part (Alaska).

*Dendroica æstiva* BROWN, Ibis, 1868, 420 (Vancouver I.).—NELSON, Cruise "Corwin" in 1881 (1883), 63 (Norton and Kotzebue sounds, Alaska).—BEAN, Proc. U. S. Nat. Mus., v, 1882, 147 (Kadiak).—BELDING, Proc. U. S. Nat. Mus., v, 1883, 536 (La Paz, Lower California, winter).—MCLENEGAN, Cruise "Corwin," 1884, 114 (Kowak R. and Hotham Inlet, Alaska, breeding).

### DENDROICA PETECHIA PETECHIA (Linnæus).

#### JAMAICAN YELLOW WARBLER.

Similar to *D. æstiva æstiva*, but larger, especially the bill and feet; wing more rounded, the outermost (ninth) primary decidedly shorter than sixth, instead of longer; lateral rectrices with more of dusky at tips and along outer side of shaft; yellow of under parts averaging deeper or richer.

*Adult male*.—Above bright yellowish olive-green (about the same as in *D. æstiva æstiva*), the forehead and crown more yellowish or (usually?) more or less tinged (often strongly so) with orange-ochraceous, but never with a sharply defined patch of this color; rump slightly more yellowish than back; greater wing-coverts and remiges dull slate-blackish, edged with yellowish olive-green, these edgings broader and decidedly yellow on greater coverts and tertials; middle wing-coverts broadly tipped with yellow; middle pair of rectrices and outer webs of other rectrices dusky olive, the outermost narrowly edged with yellow; inner webs of three outer rectrices yellow to the shaft, the next yellow very nearly to the shaft, the fifth with marginal half or more yellow—those with most yellow having a wedge-shaped terminal space of dusky; sides of head (including lores and superciliary region) and entire under parts rich lemon or gamboge yellow, the chest and sides streaked with cinnamon-rufous or light reddish chestnut; maxilla dusky with paler tomia; mandible more grayish (pale bluish gray in life?); iris brown; legs and feet brownish (in dried skins); length (skins), 110–127 (118.5); wing, 64–66 (65); tail, 48–53 (50.3); exposed culmen, 9–11 (10.6); tarsus, 20–22 (20.5); middle toe, 11–12 (11.1).<sup>1</sup>

*Adult female*.—Above (including pileum) dull yellowish olive-green, more or less tinged with gray, especially on back and scapulars; greater wing-coverts and remiges grayish dusky with light yellowish olive-green or yellowish gray edgings, these broadest on greater coverts and tertials, narrower on secondaries and primaries;

<sup>1</sup>Six specimens, from Jamaica. A single adult male from Haiti measures as follows: Wing, 63; tail, 46; exposed culmen, 11; tarsus, 21; middle toe, 12. In this Haitian specimen agrees in the main very closely with Jamaica but has the forehead and crown olive-yellow with a mere trace of orange and the dusky color of the remiges and middle rectrices is not so dark. It is that a series from Haiti might show constant differences, thus requiring of the birds from that island from those of Jamaica.

middle wing-coverts broadly tipped with dull yellowish olive-green; tail as in adult male, but yellow of inner webs of rectrices paler and more restricted; sides of head (including lores and orbital ring) and under parts pale yellow (straw yellow or naples yellow), tinged on sides with olive-green, the lower abdomen paler, sometimes nearly white; bill and feet as in adult male, but mandible paler and more brownish; length (skins), 112-130 (119.7); wing, 59-62 (60.4); tail, 47-50 (48.4); exposed culmen, 10.5-11 (10.9); tarsus, 20-22 (21.2); middle toe, 11-13 (12).<sup>1</sup>

[Many adult females of this form have the yellow of under parts partly replaced by white, and the olive-green of upper parts partly replaced by gray, especially on sides of head and neck, hindneck, and scapulars. There is nothing to indicate that these are younger birds, and I believe that the variation is simply an individual one.]

Island of Jamaica, Greater Antilles; island of Haiti?

[*Motacilla*] *petechia* LINNÆUS, Syst. Nat., ed. 12, 1766, 334 (based on *The Yellow Red-poll*, *Aricula lutea vertice rubro*, Edwards, Gleanings Nat. Hist., v, 99, pl. 256, fig. 1) — GIMELIN, Syst. Nat., i, 1788, 983.

*Motacilla petechia* LESSON, Traité d'Orn., i, 1831, 418.

[*Sylvia*] *petechia* LATHAM, Index Orn., ii, 1790, 535.

*Sylvia petechia* VIEILLIOT, Ois. Am. Sept., ii, 1807, 32, pl. 91; Nouv. Dict. d'Hist. Nat. xi, 1817, 228; Enc. Méth. ii, 1823, 443.

[*Mniotilta*] *petechia* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *petechia* GRAY, Hand-list, i, 1860, 241, no. 3496.

*Dendroica petechia* SCLATER, Proc. Zool. Soc. Lond., 1861, 71 (Jamaica); Cat. Am. Birds, 1862, 32, part (Jamaica).—COOPER, Birds Col. Val., 1878, 255, footnote (synonymy).—COVEY, Birds Bahama I., 1880, 57.—SHARP, Cat. Birds Brit. Mus., x, 1885, 277, 644 (excl. loc. Bahamas).

[*Dendroica*] *petechia* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9, part.—COVEY, List Birds W. I., 1885, 8.

[*Dendroica petechia*] MAYNARD, A. and F., Handb. Jamaica, 1881, 106.

(?) [*Motacilla*] *chloroleuca* GMELIN, Syst. Nat., i, pt. ii, 1788, 984 (Santo Domingo; based on *Petit Figuier de S. Domingue*, *Ficedula dominicensis minor* Brisson, Orn., iii, 496, pl. 26, fig. 2).

(?) [*Sylvia*] *chloroleuca* LATHAM, Index Orn., ii, 1790, 984.

(?) *Sylvia chloroleuca* STEPHENS, Shaw's Gen. Zool., x, 1817, 704.—VIEILLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 195.

## DENDROICA PETECHIA AURICAPILLA Ridgway.

### GRAND CAYMAN YELLOW WARBLER.

Similar to *D. p. petechia*, but with decidedly shorter wing and larger bill and feet. (Adult female sometimes partly gray above and whitish below, as in *D. p. petechia*.)

*Adult male*.—Length (skins), 109–126 (119.9); wing, 58–64 (61.4); tail, 48.5–51 (49.6); exposed culmen, 11–11.5 (11.1); tarsus, 20–22 (21); middle toe, 11–12 (11.4).<sup>1</sup>

*Adult female*.—Length (skins), 110–120 (116.6); wing, 59–61 (60); tail, 46–49 (47); exposed culmen, 11; tarsus, 20–21 (20.6); middle toe, 11–12 (11.3).<sup>2</sup>

Island of Grand Cayman, Caribbean Sea (south of Cuba).

*Dendroica petechia gundlachi* (not *Dendroica gundlachi* Baird) CORY, Auk, iii, 1886, 501 (Grand Cayman).

*Dendroica auricapilla* RIDGWAY, Proc. U. S. Nat. Mus., x, sig. 36, Aug. 6, 1888, 572 (Grand Cayman, Greater Antilles; coll. U. S. Nat. Mus.; ex Townsend, manuscript).

*Dendroica aurocapilla* CORY, Auk, vi, 1889, 31 (Grand Cayman); Birds W. I., 1889, 287 (Grand Cayman); Cat. W. I. Birds, 1892, 18, 118, 129, 155 (Grand Cayman).

## DENDROICA PETECHIA FLAVICEPS Chapman.

### BAHAMA YELLOW WARBLER.

Similar to *D. p. petechia*, but yellow of under parts more intense, and chestnut streaks on chest and sides heavier or more numerous; crown more rarely tinged with ochraceous or tawny. (Intermediate in coloration between *D. p. petechia* and *D. p. bartholemica*, but much nearer the latter, from which some specimens are hardly distinguishable. The adult female is sometimes partly gray above and whitish below, as in the former.)

*Adult male*.—Length (skins), 112–123 (118.7); wing, 60–64 (61); tail, 44–50 (47.9); exposed culmen, 11–12 (11); tarsus, 20–22 (20.5); middle toe, 11–13 (11.8).<sup>3</sup>

<sup>1</sup> Nine specimens.

<sup>2</sup> Three specimens.

<sup>3</sup> Twenty specimens.

*Adult female.* Length (skins), 108-119 (114.9); wing, 55-60 (57) tail, 43-47 (45.3); exposed culmen, 10-12 (11); tarsus, 19-22 (middle toe, 10-12 (11)).<sup>1</sup>

**Bahama Islands.**

(?) *Sylviicola setus* (not *Motacilla setus* Gmelin) BRYANT, Proc. Bost. Soc. N. vii, 1866, 67 (Bahamas).

*Sylviicola petechia* (not *Motacilla petechia* Linnaeus) BRYANT, Proc. Boston N. H., xi, 1867, 67 (Bahamas).

*Dendroica petechia* (not *Dendroica petechia* Sclater) RIDGWAY, Man. N. Am. B. 1887, 495, part (Bahamas).

[*Dendroica petechia*] var. *gundlachi* (not *Dendroica gundlachi* Baird) BAILEY, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 216, part (Bahamas).

*Dendroica petechia gundlachi* COYNE, Birds Col. Val., 1878, 255, part (Bahamas).

*Dendroica petechia* var. *gundlachi* CORY, Birds Bahama I., 1880, 58.

[*Dendroica petechia*] *β. gundlachi* RIDGWAY, Proc. U. S. Nat. Mus. viii, 1885, part (Bahamas).

[*Dendroica*] *petechia gundlachi* CORY, List. Birds W. I., 1885, 8, part (Bahamas).

*Dendroica petechia gundlachi* CORY, Auk, iii, 1886, 30, part (Bahamas); F. W. I., 1889, 44, Auk, viii, 1891, 297 (Caicos Islands, Inagua), 298 (Abaco) (Great Bahama), 351 (Inagua), ix, 1892, 48 (Mariguana), 49 (Watling Inagua), Cat. W. I. Birds, 1892, 17, 118 (Great Bahama, Abaco, Eleuth New Providence, Exuma Keys, Concepcion I., Watlings I., Rum Cay, I. I., Acklin I., Mariguana, North Caicos, East Caicos, and Great Inagua NORRIMON, Auk, viii, 1891, 68 (Andros I.). RIDGWAY, Auk, viii, 1891, (New Providence), 336 (Eleuthera), 337 (Watlings I.), 338 (Rum C 339 (Concepcion I.).

[*Dendroica*] *petechia gundlachi* RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 57, text, part (Bahamas).

*Dendroica petechia flaveeps* CHAPMAN, Bull. Am. Mus. N. H., iv, no. 1, Dec 1892, 310 (Bahamas). (Am. Mus. Nat. Hist.).

male with yellow of under parts richer, chestnut streaks on chest and sides much heavier, yellow tips and margins to middle and greater wing coverts more conspicuous, as well as purer yellow, and dusky portions of remiges darker, more nearly black; adult female much more richly colored than that of *D. p. petechia*, nearly always,<sup>1</sup> in perfect plumage, entirely bright yellow beneath, and with the chest and sides usually more or less streaked with pale chestnut.

*Young*.—Above plain olive-gray; remiges and rectrices as in the adult female; middle wing-coverts broadly tipped with dull grayish white or pale buffy gray, the greater coverts more narrowly tipped with the same; sides of head pale brownish gray, relieved by an orbital ring of dull white; chin, throat, chest, and sides of breast very pale buffy grayish; rest of under parts white.

*Adult male*.—Length (skins), 117–133 (124.1); wing, 59–64 (62.3); tail, 47–56 (49.1); exposed culmen, 11–13 (11.3); tarsus, 21–22 (21.3); middle toe, 11–13 (11.8).<sup>2</sup>

*Adult female*.—Length (skins), 117–123 (120.3); wing, 56–64 (60); tail, 46–51 (48.6); exposed culmen, 11; tarsus, 20–22 (21); middle toe, 11–12 (11.1).<sup>3</sup>

Islands of Porto Rico, Vieques, St. Thomas, Virgin Gorda, Anegada, and St. Croix, Greater Antilles; islands of Anguilla, St. Bartholomew, St. Eustatius, St. Christopher, Barbuda, and Antigua, Lesser Antilles.<sup>4</sup>

[*Dendroica petechia*] var. *ruficapilla* (not *Motacilla ruficapilla* Gmelin) BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 217 (Porto Rico, St. Thomas, St. Croix, and St. Bartholomew).

<sup>1</sup> Among a series of twenty-seven adult females none show any admixture of gray on the upper parts and only one a very slight admixture of whitish on the under parts.

<sup>2</sup> Nineteen specimens.

<sup>3</sup> Seventeen specimens.

Specimens from different islands average, according to the series measured, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
<b>MALES.</b>					
Seven adult males from Porto Rico .....	61.7	49.5	11.7	21	12
Five adult males from Vieques.....	62.2	49.6	11.2	21.8	12
Three adult males from St. Thomas .....	63	52.3	11	21.6	11.6
One adult male from Antigua.....	61	48	11	21	11
One adult male from St. Bartholomew .....	63	47	11	21	12
One adult male from St. Christopher.....	60	47	11	21	12
One adult male from St. Eustatius .....	65	51	11	20	11
<b>FEMALES.</b>					
Seven adult females from Porto Rico .....	61.2	49.1	11	21	12
Six adult females from Vieques.....	59	47.6	11	21.3	11.8
Two adult females from St. Thomas.....	59.5	46.5	11	21	11
One adult female from St. Bartholomew .....	59	47	11	21	12
One adult female from St. Eustatius .....	60	56	.....	20	11

<sup>4</sup> I have seen satisfactory series of specimens only from Porto Rico, Vieques, and St. Thomas, and none at all from Virgin Gorda, St. Croix, Anguilla, and Barbuda.

- Dendroica petechia* var. *ruficapilla* LAWRENCE, Proc. U. S. Nat. Mus., i, 1873, 466 (Barbuda; Antigua).
- Dendroica petechia ruficapilla* COUSA, Birds Col. Val., 1878, 255, footnote.
- [*Dendroica*] *petechia ruficapilla* CORY, List. Birds W. I., 1885, 8.
- Dendroica petechia ruficapilla* CORY, Auk, iii, 1886, 31 (Barbuda, Antigua; Porto Rico; St. Thomas); vii, 1890, 374 (Anegada), 375 (Virgin Gorda); viii, 1891, 47 (Anguilla; St. Eustatius); Birds W. I., 1889, 45; Cat. W. I. Birds, 1892, 17, 118 (Porto Rico; St. Thomas; Virgin Gorda; Anegada; St. Croix; Anguilla; St. Bartholomew; St. Eustatius; St. Christopher; Barbuda, Antigua).
- [*Dendroica petechia*] *y. ruficapilla* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 349.
- Dendroica ruficapilla* CORY, Auk, viii, 1891, 48 (St. Croix; St. Christopher); Cat. W. I. Birds, 1892, 155 (St. Bartholomew).
- Dendroica ruficapilla* SHARPE, Cat. Birds Brit. Mus., x, 1885, 275, 644.—SCLATER, Proc. Zool. Soc. Lond., 1892, 490 (Anguilla).
- Dendroica petechia* (not *Motacilla petechia* Linnaeus) CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 192, 376 (St. Thomas).—RIDGWAY, Proc. U. S. Nat. Mus., vii, 1884, 172 (St. Thomas).
- Dendroica petechia* SCLATER, Cat. Am. Birds, 1882, 32, part (St. Croix).—TAYLOR, Ibis, 1864, 160, part (Porto Rico).—LAWRENCE, Proc. U. S. Nat. Mus., i, 1873, 233 (Antigua), 239 (Barbuda).
- [*Dendroica*] *astiva* NEWTON (A. and E.), Ibis, 1859, 143 (St. Croix).
- Dendroica* [no specific name] BAIRD, Review Am. Birds, 1865, 201 (St. Croix; St. Thomas).
- [*Mniotilta*] ———? BAIRD, GRAY, Hand-list, i, 1869, 241, no. 3497.
- Dendroica petechia portoricensis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 596 (nomen nudum!).
- Dendroica petechia stirps barthelemica* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 582 (St. Bartholomew; descr. eggs; nomen nudum!).
- [*Dendroica petechia*] *a. barthelemica* SUNDEVALL, Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 607 (St. Bartholomew; coll. Stockholm Mus.).
- [*Dendroica petechia*] *b. barthelemica* SUNDEVALL, Öfv. k. Vet. Akad. Förh. Stockh.,



*Adult female*.—Length (skins), 112–125 (119.7); wing, 56–62 (58.7); tail, 44–48 (46.4); exposed culmen, 10–11 (10.8); tarsus, 20–22 (21); middle toe, 11.<sup>1</sup>

Island of Cuba, Greater Antilles.

*Sylvia æstiva* (not *Motacilla æstiva* Gmelin) LEMBEYE, Aves de la Isla de Cuba, 1850, 31 (not pl. 6, fig. 3).

*Rhimamphus æstivus* CABANIS, Journ. für Orn., 1855, 472 (Cuba); 1860, 326 (do.).—GUNDLACH, Journ. für Orn., 1861, 407 (Cuba).

*Dendroica albicollis* (not *Motacilla albicollis* Gmelin) CASSIN, Proc. Ac. Nat. Sci. Phila., 1860, 192 (Cuba).—LAWRENCE, Ann. Lyc. N. Y., vii, 1860, 264 (Cuba; crit.).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba).—ALBRECHT, Journ. für Orn., 1861, 205 (Cuba).

*Sylvicola petechia* (not *Motacilla petechia* Linnæus) BREWER, Proc. Bost. Soc. Nat. Hist., vii, 1860, 307 (Cuba).

*Dendroica petechia* CHAPMAN, Bull. Am. Mus. N. H., iv, 1892, 310 (Casilda, s. Cuba; crit.).

*Dendroica gundlachi* BAIRD, Review Am. Birds, Apr., 1865, 197 (Cuba; coll. U. S. Nat. Mus.).—GUNDLACH, Journ. für Orn., 1872, 414 (Cuba).

*Dendræca gundlachi* GUNDLACH, Repert. Fisico-Nat. Cuba, i, 1865, 234.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 278, part (Cuba).

[*Mniotilta*] *gundlachi* GRAY, Hand-list, i, 1869, 241, no. 3495.

[*Dendroica petechia*] var. *gundlachi* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 216, part (Cuba).

*Dendræca petechia gundlachi* COUES, Birds Col. Val., 1878, 255, footnote, part (Cuba).

[*Dendræca*] *petechia gundlachi* CORY, List Birds W. I., 1885, 8, part (Cuba).

*Dendroica petechia gundlachi* CORY, Auk, iii, 1886, 30, part (Cuba); Birds W. I., 1889, 44; Cat. W. I. Birds, 1892, 17, 118, part (Cuba; Isle of Pines).

[*Dendroica petechia*]  $\beta$ . *gundlachi* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 349, part (Cuba).

*D[endroica] petechia gundlachi* RIDGWAY, Proc. U. S. Nat. Mus., x, Aug. 6, 1888, 573, in text, part (Cuba).

[*Dendroica petechia*] d. *cubana* SUNDEVALL, Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 608 (monogr.).

DENDROICA PETECHIA AUREOLA (Gould).

GALAPAGOS YELLOW WARBLER.

Similar to *D. p. petechia*, but olive-green of upper parts much darker, and adult male with pileum always rufous-chestnut, forming a well-defined cap, sharply defined laterally against the yellow of the superciliary region.

*Adult male*.—Pileum uniform chestnut-rufous, sharply defined laterally; rest of upper parts plain deep yellowish olive-green, very slightly, if at all, more yellowish on rump, the upper tail-coverts even darker than back; wings (except lesser coverts) dusky, the middle coverts broadly tipped with yellow, the greater coverts and remiges edged with yellow, these edgings broader and clearer yellow on greater coverts and tertials, narrower and more or less tinged with olive-green on secondaries and primaries; tail dusky, the four middle rectrices inclining to dark olive-green, the rest with inner webs yellow, except at

<sup>1</sup> Eight specimens.

tips; sides of head (including superciliary stripe), and entire under parts rich lemon or gamboge yellow, the chest and sides streaked with pale chestnut or cinnamon-rufous; maxilla black, with paler tomia; mandible dusky grayish (bluish gray in life?); legs and feet horn brownish (in dried skins); length (skins), 117-132 (123.7); wing, 62-67 (65.4); tail 47-56 (50.3); exposed culmen, 11-13 (11.7); tarsus, 21-22 (21.5); middle toe, 12.<sup>1</sup>

*Adult female*.—Above plain olive-green, including pileum; wings and tail as in adult male but yellowish edgings much less distinct; superciliary stripe and under parts plain gamboge yellow, paler and duller than in adult male; length (skins), 125-129 (127); wing, 60-64 (61.3); tail, 45-49 (47); exposed culmen, 11-12 (11.3); tarsus, 18-20 (19); middle toe, 14.<sup>2</sup>

*Immature male*.—Similar to adult female but chest and sides faintly streaked with pale chestnut, hindneck and sides of neck gray, chin and throat whitish, and yellowish wing-edgings more distinct.

*Younger (?) male*. Pileum, hindneck, and sides of neck gray, the crown tinged with olive-green; rest of upper parts as in plumage last described above, but yellowish wing-edgings less distinct; under parts dull white, tinged with pale yellow on flanks, lower abdomen, and under tail-coverts, and with pale gray on sides of chest.

Galapagos Archipelago (Albemarle, Duncan, Charles, Hood, Chatham, Barrington, Indefatigable, Jervis, James, Tower, Bindloe, and Abingdon islands); Cocos Island, off Bay of Panama; Gorgona Island, Bay of Panama?; coast of Ecuador (Guayaquil)?; coast of Peru (Santa Lucia; Tumbes)?<sup>3</sup>

- [*Dendroeca*] *aureola* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.  
*D[endroica] aureola* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 217.  
 [*Dendroica petechia*] *ξ. aureola* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 350.  
*Dendroica petechia* . . . var. SUNDEVALL, Proc. Zool. Soc. Lond., 1871, 124 (Chatham, Charles, and James islands).  
 [*Dendroeca petechia*] *f. gallapagensis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 608 (monogr.).  
 (?) [*Dendroeca petechia*] *g. peruviana* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 609 (Callao, w. Peru; coll. Stockholm Mus.; also, Guayaquil, w. Ecuador).  
 (?) [*Dendroeca petechia*] *h. æquatorialis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 609 (Guayaquil, w. Ecuador; coll. Stockholm Mus.; also, Callao, w. Peru).

### DENDROICA RUFICAPILLA RUFICAPILLA (Gmelin).

#### GADELOUPE YELLOW WARBLER.

Similar to *D. petechia bartholemica*, but much smaller; adult male (in full plumage) with crown much deeper and more extensively orange-rufous or rufous-chestnut (whole pileum sometimes almost continuously of this color, fading on forehead to a more orange-ochraceous hue); back, etc., darker olive-green; adult female much smaller than that of *D. petechia bartholemica*, but very similar in coloration, except that the forehead and crown are usually tinged (often strongly so) with orange-ochraceous. Still more similar in coloration to *D. p. rufivertex*, and about the same size, but adult male with chestnut streaks on chest and sides much narrower and adult female with forehead and crown more or less strongly tinged with yellow and orange-ochraceous.

*Adult male*.—Length (skins), 109–125 (115.1); wing, 56–60 (58.4); tail, 43–48 (45.5); exposed culmen, 9.5–11 (10.4); tarsus, 18–20 (19.1); middle toe, 11–12 (11.6).<sup>1</sup>

*Adult female*.—Length (skins), 110–129 (117.2); wing, 53–58 (55.3); tail, 42–45 (43.6); exposed culmen, 10–11 (10.2); tarsus, 18–20 (19.4); middle toe, 11.<sup>2</sup>

<sup>1</sup> Eight specimens.

<sup>2</sup> Eleven specimens.

Specimens from the island of Dominica average larger than those from Guadeloupe, averages of the series measured being as follows:

Locality.	Wing.	Tail.	Ex-posed culmen.	Tarsus.	Middle toe.
<b>MALES.</b>					
Four adult males from Guadeloupe .....	57.4	43.7	10.1	18.7	11.3
Four adult males from Dominica .....	59.4	47.2	10.6	19.4	11.7
<b>FEMALES.</b>					
Seven adult females from Guadeloupe .....	54.5	43.8	10.1	19.7	11
Four adult females from Dominica .....	56.6	43.4	10.4	18.9	11

Birds Am., oct. ed., ii, 1841, 44, pl. 85.—NUTTALL, Man. Orn. U. S. and Canada, 2d ed., i, 1840, 424.—HOY, Proc. Acad. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin).—WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 282 (Nova Scotia).—BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 110 (Bahamas).—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).—ALBRECHT, Journ. für Orn., 1861, 53 (Bahamas).

[*Sylvicola*] *maritima* BONAPARTE, Conspect. Av., i, 1850, 307.

*Certhiola maritima* GOSSE, Birds Jamaica, 1847, 87; Illustr. Birds Jam., 1849, pl. 17.

*Mniotilta* *maritima* GRAY, Gen. Birds, i, 1848, 196.

*Mniotilta maritima* CABOT, Naumannia, ii, Heft. iii, 1852, 66 (Lake Superior).

*Rhinamphus maritimus* GÜNDLACH, Journ. für Orn., 1855, 474 (Cuba); 1861, 409 (do.).

#### DENDROICA CARBONATA (Audubon).

##### CARBONATED WARBLER.

Apparently resembling *D. tigrina*, but differing in having no cinnamon-rufous on sides of head, no white spots on inner webs of lateral rectrices (?), and in having the greater wing-coverts tipped with yellow instead of edged with whitish.

“*Young male.* Bill of ordinary length, nearly straight, subulato-conical, acute, nearly as deep as broad at the base, the edges acute, the gap line slightly deflected at the base. Nostrils basal, lateral, elliptical, half-closed by a membrane. Head rather small. Neck short. Body slender. Feet of ordinary length, slender; tarsus longer than the middle toe, covered anteriorly by a few scutella, acutely edged behind; toes scutellate above, the inner free, the hind toe of moderate size; claws slender, compressed, acute, arched. Plumage soft, blended, luffy. Wings of ordinary length, acute, the second quill longest.

brown; wings dark brown, edged with yellow; tail-feathers brown, heavily marked with yellow on the inner webs and faintly edged with it on the outer.

“Length, 120.6; wing, 59.7; tail, 50.8; tarsus, 20.3; bill, 7.6.”<sup>1</sup>  
(Cory.)

St. Andrews Island, Caribbean Sea.

*Dendroica flavida* CORY, Descr. Six New Sp. Birds from Old Providence and St. Andrews, May 27, 1887, 3; Auk, iv, July, 1887, 179 (St. Andrews Island, Caribbean Sea; coll. C. B. Cory).

## DENDROICA RUFICAPILLA RUFOPILEATA Ridgway.

### CURAÇAO YELLOW WARBLER.

Similar to *D. r. ruficapilla*, but forehead and crown uniform chestnut, forming a sharply defined oval patch, the adult female with under parts paler yellow.

*Adult male*.—Forehead and crown uniform rufous-chestnut, forming a sharply defined oval patch; rest of upper parts plain yellowish olive-green, becoming decidedly yellowish on lower rump, the longer upper tail-coverts darker olive-green, with yellowish edges; wings (except lesser coverts) dusky, the middle coverts broadly tipped with yellow, the greater coverts and tertials broadly edged with yellow, the secondaries and primaries more narrowly edged with yellowish olive-green; rectrices dusky, edged with yellowish olive-green, the inner webs of four outermost chiefly yellow; sides of head (including superciliary stripe) and under parts rich, pure gamboge or lemon yellow, the chest broadly streaked with chestnut-rufous, the sides and flanks sometimes more narrowly streaked with the same; maxilla black, with paler tomia; mandible grayish dusky (bluish gray in life?); iris brown; legs and feet horn brownish (in dried skins); length (skins), 112–115 (114.2); wing, 56–60 (57.5); tail, 44–47 (45.2); exposed culmen, 9–11 (10.5); tarsus, 18–19 (18.5); middle toe, 10–12 (11).<sup>2</sup>

*Adult female*.—Above plain yellowish olive-green, including pileum, the wings and tail as in adult male; sides of head and under parts yellow, paler and duller than in adult male, and without streaks or else with mere traces of them on chest; length (skins), 102–112 (108.7); wing, 53–57 (54.6); tail, 41–47 (43); exposed culmen, 9–11 (10); tarsus, 16–19 (18); middle toe, 10.<sup>3</sup>

Island of Curaçao, southern Caribbean Sea.

*Dendroica rufopileata* RIDGWAY, Proc. U. S. Nat. Mus., vii, July 29, 1884, 173 (Curaçao, Dutch West Indies; coll. U. S. Nat. Mus.).—BERLEPSCH, Journ. für Orn., 1892, 76 (Curaçao).—PETERS, Journ. für Orn., 1892, 116 (Curaçao).

<sup>1</sup> Measurements converted from inches and tenths.

<sup>2</sup> Four specimens.

<sup>3</sup> Three specimens.

by a white or whitish spot, of greater or less extent,<sup>1</sup> at base of longer primaries; rectrices darker and more grayish olive, edged with light bluish or greenish gray, the inner web of outermost rectrix sometimes with an indistinct paler, rarely whitish, subterminal spot; a whitish streak on upper and lower eyelids, the former continued backward for a greater or less distance over auriculars; under parts, including malar region, pale, dull olive-yellowish, shaded with olive laterally; bill blackish; iris brown; legs and feet dusky horn color (in dried skins).

*Adult female in autumn and winter.*—Similar to the spring and summer plumage, but color of upper parts brighter, more greenish olive, under parts more decidedly yellowish, bill browner, and legs and feet paler brown.

*"First plumage, male.*—Remiges and rectrices as in autumnal males, the former slightly paler in color. Rest of upper parts, including the wing-coverts, dark olive-brown; sides of head very dark brown; lores black; throat, jugulum, lower eyelid, and a very conspicuous supra-orbital line, pale buff; breast and sides ashy, tinged with olive. Abdomen, anal region, and crissum strong sulphur-yellow. White spot on base of primaries fully developed.

*"First plumage, female.*—Remiges and rectrices as in autumnal female. Rest of upper parts, including wing-coverts and sides of head, light olive-brown. Lores dull black. Superciliary line, both eyelids, throat, jugulum, abdominal and anal regions, with crissum, light buff. Breast and sides olive, tinged with buff. Spot on base of primaries dirty white."<sup>2</sup>

chestnut; upper parts (except pileum, wings, and tail) plain deep olive-green,<sup>1</sup> slightly more yellowish on rump, the upper tail-coverts sometimes indistinctly edged with yellowish; wings (except lesser coverts) dull black, the middle and greater coverts rather narrowly tipped with yellow, the greater coverts and remiges edged with yellow or yellowish olive-green; middle pair of rectrices dusky, edged on outer web with olive-green, on inner with pale yellow; remaining rectrices with inner webs mostly yellow; maxilla blackish, mandible grayish dusky (bluish gray in life?); legs and feet pale brownish (in dried skins); length (skins), 112–120 (116); wing, 56–57 (56.5); tail, 40.5–43 (41.7); exposed culmen, 11–12 (11.5); tarsus, 17–19 (18); middle toe, 11.<sup>2</sup>

*Young (female?), first plumage.*—Above plain, rather dark olive-green; wings dusky, with dull olive-green edgings to greater coverts and remiges, the middle coverts tipped with the same; under parts pale dull yellow, shaded laterally with olive, the chest indistinctly but broadly streaked with pale rusty.

Island of Martinique, Lesser Antilles.

*Sylvia ruficapilla* (not *Motacilla ruficapilla* Gmelin) VIEILLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 228; Enc. Méth., ii, 1823, 442, not of p. 440 (Martinique).

*Dendroica rufigula* BAIRD, Review Am. Birds, Apr., 1865, 204 (locality unknown; coll. Acad. Nat. Sci. Phila.).—CORY, Auk, iii, 1886, 32 (Martinique); 1887, 95 (do.); Birds W. I., 1889, 46; Cat. W. I. Birds, 1892, 18, 118, 133.—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 350 (Martinique).

*Dendræca rufigula* LAWRENCE, Proc. U. S. Nat. Mus., i, 1879, 353 (Martinique; crit.).—CORY, List Birds W. I., 1885, 8.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 285, 645, excl. syn. part (Martinique).

*Dendræca vieilloti rufigula* (not *Dendroica vieilloti* var. *rufigula* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 217) COUES, Birds Col. Val., 1878, 256, footnote, part.

[*Mniotilta*] *rufigula* GRAY, Hand-list, i, 1869, 241, no. 3498 (Martinique).

*Dendræca vieilloti* (not of Cassin) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 125, part (in synonymy).

## DENDROICA ERITHACHORIDES Baird.

### PANAMA YELLOW WARBLER.

Similar to *D. rufigula*, but decidedly larger, with smaller bill; much lighter and more yellowish olive-green above, and under parts much more broadly streaked with chestnut-rufous.

*Adult male.*—Pileum uniform rich rufous-chestnut (exactly as in *D. rufigula*); rest of head similar but slightly paler (intermediate between orange-rufous and cinnamon-rufous); under parts, posterior to throat, rich gamboge or lemon yellow, conspicuously streaked except on abdomen, anal region, and under tail-coverts, with the color of the throat, the streaks broadest on chest where confluent with the

<sup>1</sup> Much darker than in *D. erithachorides* and allied continental forms.

<sup>2</sup> Two specimens.

uniform color of throat; upper parts (except pileum, wings, and tail) plain yellowish olive-green, slightly paler or more yellowish on lower rump and upper tail-coverts; wings (except lesser coverts) dusky, the middle coverts broadly tipped with yellow, the greater coverts and tertials broadly edged with yellow, the secondaries and primaries more narrowly edged with yellowish olive-green; rectrices dusky, edged with yellowish olive-green, the inner webs of all except middle pair mostly yellow; maxilla blackish, with paler tomia; mandible grayish dusky (bluish gray in life?); legs and feet pale brownish (in dried skins); length (skins), 112-120 (115.3); wing, 61-70 (66); tail, 47-52 (49.5); exposed culmen, 11; tarsus, 18-22 (20); middle toe, 12-14 (13).<sup>1</sup>

*Adult (?) female.*—Above plain olive-green, duller anteriorly (especially on pileum), brighter posteriorly (on rump and upper tail-coverts); wings dusky, with light olive-greenish edgings, these inclining to pale yellow on greater coverts and tertials; tail as in adult male, but with much less yellow on inner webs of rectrices, even the outermost having more dusky than yellow on inner web; sides of head paler olive-greenish than pileum, the eyelids pale yellowish; under parts dull lemon or gamboge yellow, shaded laterally with pale olive-greenish; wing, 63; tail, 47; exposed culmen, 11; tarsus, 21; middle toe, 13.<sup>2</sup>

*Immature male.* Similar to the supposed adult female, but chest and sides indistinctly streaked with pale rufous-chestnut, forehead and crown tinged with the same, and the lores, chin, and throat dull orange-yellow.

*Young (female?).*—Above dull pale olive, or light brownish gray tinged with olive-green; beneath pale dull buffy.<sup>3</sup>

Caribbean coast district of northern Colombia (Cartagena, etc.) and Isthmus of Panama (Buenaventura; Panama City); San Miguel Island,



*Dendroica vieillotii* BANGS, Auk, xviii, 1901, 30 (San Miguel I., Bay of Panama).

*Dendræca vieiloti* SCLATER, Cat. Am. Birds, 1862, 32, part (Colombia).—COUES, Birds Col. Val., 1878, 256, footnote (synonymy).

[*Dendroica vieiloti*] var. *vieiloti* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 217, (Cartagena, Colombia).

[*Dendræca*] *vieiloti* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9, part.

[*Dendroeca petechia*] i. *panamensis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh., Stockh., xxvi, 1870, 609 (= *D. vieiloti* Cassin).

[*Dendroica vieiloti*] var. *rufigula* (not *Dendroica rufigula* Baird, 1865) BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 217 (Isthmus Panama).

### DENDROICA BRYANTI BRYANTI Ridgway.

#### BRYANT'S YELLOW WARBLER.

Similar to *D. erithachorides*, but adult male with chest and sides much less heavily streaked (sometimes almost without streaks), the chestnut-rufous of the throat abruptly defined posteriorly.

*Adult male*.—Pileum varying from rufous-tawny to nearly chestnut, the rest of the head, including usually the whole throat, similar but very slightly paler; hindneck,<sup>1</sup> back, scapulars, lesser wing-coverts, rump, and upper tail-coverts, plain yellowish olive-green, the back sometimes indistinctly streaked with dark chestnut or dusky; wings (except lesser coverts) dusky, the middle coverts broadly tipped with yellow, the greater coverts and tertials broadly edged with yellow, the secondaries and primaries more narrowly edged with yellowish olive-green; tail dusky, the rectrices edged with yellowish olive-green and with inner webs of all except middle pair mostly yellow; under parts, except throat,<sup>2</sup> rich lemon or gamboge yellow, the chest and sides usually narrowly streaked with chestnut, rarely almost immaculate; maxilla black, with paler tomia; mandible dusky grayish (bluish gray in life?); iris brown; legs and feet horn color or light brownish (in dried skins); length (skins), 120–134 (124.7); wing, 62–70 (65.7); tail, 46–56 (50); exposed culmen, 11; tarsus, 20–22 (20.9); middle toe, 11–13 (12.4).<sup>3</sup>

*Adult female*.—Exceedingly variable in coloration. Above varying from entirely plain yellowish olive-green to mostly dull ash gray; beneath, from wholly yellow, tinged with olive-green laterally, to white, tinged with gray laterally; chest sometimes very narrowly streaked with chestnut, and head sometimes with scattered feathers of that color; length (skins), 110–121 (116); wing, 58–62 (60.4); tail, 45–46

<sup>1</sup> Sometimes, apparently, the rufous-tawny color of the pileum descends over the upper hindneck.

<sup>2</sup> Usually the entire throat is uniform rufous-tawny or light chestnut-rufous, but this color never invades the chest; sometimes only the upper half (more or less) of the throat is of this color, the lower throat being yellow, like the chest and other under parts. In all cases the color is abruptly defined, all round.

<sup>3</sup> Eleven specimens.

Breeding in mountain districts of Pennsylvania and south along higher Alleghenies to the Cowee and Black mountains in western North Carolina; Cumberland Island, Georgia, during migration (one specimen, April 9), and Cuba in winter (Matanzas, one specimen, February 14, 1900).

*Dendroica coronata* (not *Dendroica coronata* (Linn.) Brewster, Auk iii, 174. Cowee Mts. and Black Mts., w. North Carolina breeding at 5,200 to 6,000 ft. — *Forster's* Auk, v, 1863, 154. Chester Co., South Carolina, notes specimens with black on back and crown. — STONER, Proc. Ac. Nat. Phila., 1892, 437. Luzerne Co., Pennsylvania breeding. — Auk, v, 1894, 100. Pocono Mts., Pennsylvania breeding. — *Forster's* Auk, v, 1894, 414. Luzerne and Fairfield counties, Pennsylvania, breeding. — BULL, Auk, 1896, 280. n. York Co., Pennsylvania, breeding. — RAY, Auk, vi, 1899, 120. West Virginia, breeding in spruce belt.

*Dendroica coronata* (Linn.) COOPER, Papers Ward's Congress Orn., 1896, 120. *Isotrope nana* (Linn.)

*Dendroica coronata* (Linn.) COOPER, Auk, xiv, Jan., 1897, 96. (contributions of North Carolina coll. W. Brewster, in no first characterized. — AMERICAN ORNITHOLOGICAL UNION COMMITTEE, Auk, xiv, 1897, 23. BAKER, Auk, xv, 1898, 192. Cumberland I., Georgia, 1 spec. — Apr. 9, crit.)

## DENDROICA CORONATA Linnæus.

### MYRTLE WARBLER.

*Adult male in spring and summer.* Above bluish slate gray, streaked (except sometimes on hindneck) with black, the streaks broadest on back and scapulars; crown with a large, partly concealed, elongate patch of bright lemon yellow, the lower rump with a triangular patch of paler yellow; wings black with gray edgings, the middle and greater coverts rather broadly tipped with white, producing two distinct bands; upper tail-coverts black margined with slate gray; tail black with gray edgings, the three outermost rectrices with a large subterminal patch of white on inner web, decreasing in size from the outermost to the

I am unable to define with any degree of accuracy the respective breeding races of this form and of *D. c. carolinensis* in Pennsylvania. Among a large number of specimens obtained during the breeding season, belonging to the collection of the American Ornithological Survey, are some which I can not distinguish from *D. c. coronata*. Among them apparently extreme examples, even of that form, *D. c. coronata* (Linn.) (Linn.) Fayette, Forest, Franklin, Indiana. McKean, New York, and W. Ohio, etc. In four of these counties, namely, Carabau, Fayette, Franklin, and W. Ohio, are represented by specimens which I am unable to distinguish from *D. c. coronata*. Breeding specimens from Carabau, etc. On the whole, the form is not larger, in fact, than *D. c. carolinensis* have.

third; a supraloral spot or streak, and a narrow spot on each eyelid, white, that on upper eyelid sometimes extended backward above auricular region, sometimes confluent with the white supraloral spot; sides of head, including entire loreal, suborbital, and auricular regions, uniform black; malar region, chin, and throat white, the lower portion of the last sometimes partly black; chest more or less heavily spotted or clouded with black, this color sometimes nearly uniform; a large patch of light lemon or canary yellow on each side of breast; median line of breast, together with abdomen and under tail-coverts, white; between the yellow lateral patches and the white median area of the breast an elongated patch of black, confluent with jugular area, and extending backward to the flanks, where broken into broad streaks; bill black; iris brown; legs and feet dark brown.

*Adult male in autumn and winter.*—Very different from the summer plumage; above grayish brown, with the black streaks concealed, except on back and scapulars, where much less conspicuous than in summer plumage; yellow crown-patch concealed by brown tips to the feathers; sides of head brown, like pileum, varied by the same white markings as in summer plumage, but these less distinct; chin, throat, and chest brownish white or pale buffy brown, the last more or less streaked with black; lateral yellow pectoral patches less distinct than in summer, usually tinged with brownish and flecked with dusky; black sublateral pectoral areas broken by broad white margins to feathers; wings and tail as in summer, but white bands across former more or less brownish.

*Adult female in spring and summer.* Similar to the summer male, but smaller and duller in color; the upper parts tinged (sometimes strongly) with brown; yellow crown-patch smaller; wing-bands narrower; sides of head brown or dusky brownish gray, instead of black; less of black on chest and sides of breast, and yellow lateral pectoral patches smaller and paler yellow.

*Adult female in autumn and winter.*—Similar to the winter male, but smaller; upper parts more decidedly brown, with streaks obsolete, except on back; yellow crown-patch more restricted (sometimes nearly obsolete); wing-bands, eyelids, and bill brown; under parts pale buffy brown anteriorly and laterally; median portion of breast, abdomen, and under tail-coverts dull yellow; yellow patches on sides of

and with grayish  
with dusky; wings

fig. 70-78 (74.1);  
as, 18-21 (18.6);

*Adult female*.—Length (skins), 118–140 (130); wing, 67–75 (70.5); tail, 51.4–59 (56.1); exposed culmen, 8.2–10.4 (9.2); tarsus, 18–19.6 (18.7); middle toe, 11.2–12.8 (12).<sup>1</sup>

North America in general, chiefly east and north of Rocky Mountains; breeding from mountains of western Massachusetts (Berkshire Co.), northeastern New York (Adirondacks), northern Michigan (Mackinac Island), Manitoba, etc., to limit of tree-growth (Labrador to western Alaska); wintering from United States (except extreme northern portions) southward to West Indies (Bahamas, Cuba, Jamaica, Haiti, and Porto Rico), island of Old Providence (Caribbean Sea), and through Mexico (both coasts) and Central America to Isthmus of Panama; accidental in Greenland (three records), eastern Siberia (Tschuktschi Peninsula, May); occasional in Bahamas. Said to breed in Jamaica!

[*Motacilla*] *coronata* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 333 (based on *Golden-crowned Flycatcher*, *Muscicapa aureo vertice*, Edwards, Gleanings Nat. Hist. 187, pl. 298, fig. 1).—GMELIN, Syst. Nat., i, 1788, 974.

*Motacilla coronata* BODDAERT, Tabl. Pl. Enl., 1783, 44.

[*Sylvia*] *coronata* LATHAM, Index Orn., ii, 1790, 538.—VIEILLLOT, Ois. Am. Sept., ii, 1807, 24, pls. 78, 79; Nouv. Dict. d' Hist. Nat., xi, 1817, 178; Enc. Méth., ii, 1823, 426.—WILSON, Am. Orn., ii, 1810, 138, pl. 17, fig. 4; ii, 356, pl. 45, fig. 3.—STEPHENS, Shaw's Gen. Zool., x, 1817, 636.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 192; Ann. Lyc. N. Y., ii, 1826, 77.—LESSON, Traité d'Orn., 1831, 418.—LICHTENSTEIN, Preis-Verz. Mex. Vög., 1831, 2 (Alvarado and Temascaltepec); see Journ. für Orn., 1863, 57.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 361.—AUDUBON, Orn. Biog., ii, 1834, 303, pl. 153.—D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 60.—WEIR, Proc. Bost. Soc. N. H., x, 1866, 267 (Labrador).

*Sylvicola coronata* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 216.—BONAPARTE, Geog. and Comp. List, 1838, 22.—AUDUBON, Synopses, 1839, 51; Birds Am., oct. ed., ii, 1841, 23, pl. 76.—GOSSK, Birds Jamaica, 1847, 155.—PENNY, Proc. Zool. Soc. Lond., 1847, 38. Jamaica and Cuba.—JARDINE,

Contr. Orn., 1850, 7 (Bermudas, Oct. 30 to Jan. 24).—MARTENS, Journ. für Orn., 1850, 213 (Bermudas).—REINHARDT, Journ. für Orn., 1854, 439 (Greenland).—HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 309 (New Mexico).—BRYANT, Proc. Bost. Soc. N. H., 1855, 142 (Massachusetts, Jan.); vii, 1859, 110 (Bahamas); x, 1866, 251 (Porto Rico); xi, 1867, 91 (Santo Domingo); Journ. für Orn., 1866, 184 (Porto Rico).—SALLÉ, Proc. Zool. Soc. Lond., 1857, 231 (Santo Domingo).—BLAND, Ann. Rep. Smithsonian Inst. for 1859 (1860), 287 (Bermudas).—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).—ALBRECHT, Journ. für Orn., 1861, 52 (Bahamas); 1862, 194, 201 (Jamaica).

[*Sylvicola*] *coronata* BONAPARTE, Consp. Av., i, 1850, 307.

*M[niotilta]* *coronata* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *coronata* GRAY, Hand-list, i, 1869, 240, no. 3466.

*Mniotilta varia* REINHARDT, Ibis, 1861, 5 (s. Greenland; 3 instances).

*R[himanphus]* *coronata* CABANIS, Mus. Hein., i, 1850, 19.

*Rhimamphus coronata* GUNDLACH, Journ. für Orn., 1855, 473 (Cuba); 1861, 408 (do).—SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Cordova, Vera Cruz).

*Dendroica coronata* GRAY, List Gen. Birds, App., 1842, 8.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 272; Cat. N. Am. Birds, 1859, no. 194; Review Am. Birds, 1865, 187 (Mirador and Orizaba, Vera Cruz; Coban and Dueñas, Guatemala; Jamaica; Porto Rico; "Panama").—SCLATER, Proc. Zool. Soc. Lond., 1858, 295 (Cordova).—SCLATER and SALVIN, Ibis, 1859, 11 (Guatemala).—HENRY, Proc. Ac. Nat. Sci. Phila., xi, 1859, 106 (New Mexico).—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 180 (Whidbey I., Washington, Apr., 2 specs.).—BOARDMAN, Proc. Bost. Soc. N. H., ix, 1862, 125 (Maine, breeding).—MARCH, Proc. Ac. Nat. Sci. Phila., xv, 1863, 292 (Jamaica, breeding).—GUNDLACH, Repert. Fisico.—Nat. Cuba, i, 1865, 233 (Cuba); Journ. für Orn., 1872, 413 (Cuba); Anal. Soc. Esp. Hist. Nat., vii, 1878, 180 (Porto Rico).—BUTCHER, Proc. Ac. Nat. Sci. Phila., xx, 1868, 149 (Laredo, Texas, Dec., Jan.).—DALL and BANNISTER, Trans. Chicago Ac. Nat. Sci., i, 1869, 278 (Nuklukahyet and Nulato, Alaska).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, Vera Cruz, winter).—FRANTZIUS, Journ. für Orn., 1869, 293 (Costa Rica).—AIKEN, Proc. Bost. Soc. N. H., xv, 1872, 196 (El Paso Co., Colorado).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 227, pl. 12, figs. 9, 12.—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 58 (Denver, Colorado, May 7-17); Zool. Exped. W. 100th Merid., 1875, 193 (do.).—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (n. New England, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 655.—CORY, Auk, iii, 1886, 34; iv, 1887, 180 (Old Providence I., Caribbean Sea); Birds W. I., 1889, 48; Cat. W. I. Birds, 1892, 118 (Great Bahama, Abaco, Biminis, Berry Islands, Eleuthera, New Providence, Rum Cay, North Caicos, Grand Caicos, East Caicos, and Great Inagua, Bahamas; Cuba; Jamaica; Haiti; Porto Rico).—RALPH, Trans. Oneida Hist. Soc., iii, 1886, 138 (Adirondacks, New York, breeding).—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 202.—TOWNSEND Auk, iv, 1887, 13 (Kowak R., n.w. Alaska); Proc. U. S. Nat. Mus., x, 1887, 223 (Red Bluff, May, and Humboldt Bay, fall, n. California; "plentiful").—RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 575 (Swan I., Caribbean Sea); Orn. Illinois, i, 1889, 140.—SCOTT, Auk, v, 1888, 34 (Catalina Mts., etc., Arizona regular migrant); 430 (Key West, Florida, July 28).—COOKE, Bird Migr. Miss. Val., 1888, 246-248 (dates, etc.; breeding from n. Minnesota northward).—BELDING, Land Birds Pacific Distr., 1890, 209 (Pacific coast records).—CHERRIE, Auk, vii, 1890, 336 (San José, Costa Rica, Jan. 19 and Feb. 15).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 618 (Manitoba, breeding).—MACFARLANE, Proc. U. S. Nat. Mus., xiv, 1891, 444 (Anderson R.,

Arctic Am., breeding). RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484 (Greytown and Rio Escondido, Nicaragua, Nov. 28 and Feb. 16). WHITE, Auk, x, 1893, 227 (Mackinac I., Michigan, breeding). NUTTING, Bull. Lab. N. H. State Univ., Iowa, ii, 1893, 277 (Chemawawin, Saskatchewan, breeding). NEHRLING, Our Native Birds, etc., i, 1893, 204, pl. 13, fig. 5.—RHOADS, Proc. Ac. Nat. Sci. Phila., 1893, 54 (Vancouver I. and Washington during migration).—ALLEN (F. H.), Auk, xii, 1895, 89 (Berkshire Co., Massachusetts, breeding).—THORPE, Auk, xii, 1895, 218 (Fort Keogh, Montana, common in spring).—CHERRIE, Contr. Orn. San Dom., 1896, 11 (winter, till March 27).—ALLEN (G. M.), Auk, xiv, 1897, 326 (Mount Wachusett, Massachusetts, 1 spec., July 29).—GRISWELL, Rep. Birds Santa Barbara, etc., 1897, 7 (Santa Barbara I., California, 1 spec., May 15), Pl. ii, Pasadena Ac. Sci., 1898, 45 (Los Angeles Co., California, common winter visitant).—DWIGHT, Auk, xvi, 1899, 217, pl. 3, upper fig. (sequence of plumages).—STONE, Proc. Ac. Nat. Sci. Phila., 1900, 33 (Point Tangent, Alaska, June 3).—OSGOOD, N. Am. Fauna, no. 21, 1901, 79 (Fort Kenai, Alaska).—MAILLARD, Condor, iii, 1901, 126 (San Benito Co., California, winter resident).—HOWELL, Auk, xviii, 1901, 344 (Mt. Mansfield, Vermont, breeding).—BIGELOW, Auk, xix, 1902, 30 (coast s. Labrador, breeding).

[*Dendroica coronata*] var. *coronata* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 219.

*Dendroica coronata* GUNDELACH, Journ. fur Orn., 1861, 326 (Cuba).

*Dendroica coronata* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz), Cat. Am. Birds, 1862, 30 (Jamaica).—LAWRENCE, Ann. Lyc. N. Y., viii, 1863, 484 (Panama R. R.); ix, 1868, 94 (Angostura, Costa Rica); Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Santa Filomena, Oaxaca, Dec. Jan.).—SCLATER and SALVUS, Proc. Zool. Soc. Lond., 1864, 347 (Panama R. R.), 1870, 836 (San Pedro, Honduras).—BROWN, Ibis, 1868, 420 (Vancouver I.).—DUGES, La Naturelleza, i, 1870, 140 (Guamajato).—COOPER, Orn. Cal., 1870, 89 (California, Straits of Fuca and Puget Sound, Washington).—NEWTON (A.), Man. Nat. Hist. Greenland, 1875, 97, 3 spec.; Cores, Check List, 1873, no. 78, 2d ed. 1882, no. 119, Birds N. W., 1874, 57, 232 (Colorado, abundant); Birds Col. Val., 1878, 278. GUNDELACH, Orn. Cuba, 1876, 65. BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 58 (decr. young); (?) vii, 1882, 137 (Chiricahua Mts., Arizona, Mar.; crit.).—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1878, 65 (Calaveras Co., Fresno, and Haywards, California), Nom. N. Am. Birds, 1881, no. 95.—MEARNS, Bull. Nutt. Orn. Club, iv, 1879, 34 (wintering in lower Hudson Valley).—KUMLIEN, Bull. U. S. Nat. Mus., no. 15, 1879, 74 (Godhavn, Greenland, 1 spec., July 31, 1878). Bull. Nutt. Orn. Club, v, 1880, 182 (e. Maryland, breeding?).—SALVUS and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 127 (Belize, British Honduras; Escuintla, Dueñas, San Jeronimo, Coban, and Cahabon, Guatemala; Volcan de Chiriqui, Veragua, etc.).—JEFFRIES, Bull. Nutt. Orn. Club, iv, 1879, 118 (wintering at Swampscott, Massachusetts).—BERNARD, Proc. U. S. Nat. Mus., i, 1879, 405 (Marysville and Murphys, California, Dec. to Feb., abundant).—CORY, Birds Bahama I., 1880, 59, Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti), Birds Haiti and San Dom., 1885, 30. ALDEN and BREWSTER, Bull. Nutt. Orn. Club, vii, 1883, 158 (Colorado Springs, Colorado, Apr., common). HARTUNG, Journ. fur Orn., 1883, 267 (Portage Bay, Alaska). NELSON, Cruise "Corwin," 1881 (1883), 64 (Norton Sound, Alaska).—BOICARD, Proc. Zool. Soc., Lond., 1883, 440 (Izamal, Yucatan).—FOX, Auk, i, 1884, 192 (Hobbs, New Hampshire, June 25).—MCLENNAN, Cruise "Corwin," 1884, 114 (Kowak R., Alaska).—GOODALE, Auk, ii, 1885, 216 (Pine Point,



- Maine, Jan. 1; 6 specimens).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 311, 649 (Repulse Bay and Fort Simpson, arctic Am.; Ciudad Durango, July 27 !; Mazatlan; Progreso, Yucatan; etc.).
- [*Dendroica*] *coronata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.—CORY, List Birds W. I., 1885, 8.
- D[endræca]* *coronata* NEWTON (A. and E.), Handb. Jamaica, 1881, 106.—COUES, Key N. Am. Birds, 2d ed., 1884, 301.
- Dendroeca coronata* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 596 (Porto Rico), 613 (monogr.).—PALMÉN, Vega-Exp., 1887, 276 (Tschuktschi Peninsula, Siberia, May 25, 1879).
- [*Motacilla*] *canadensis* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 334 (based on *Figuier cendré de Canada*, *Ficedula canadensis cinerea*, Brisson, Orn., iii, 524, pl. 27, fig. 1).
- [*Parus*] *virginianus* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 342 (based on *Mésange de Virginie*, *Parus virginianus*, Brisson, Orn., iii, 575; *Yellow-rump*, *Parus uropygeo luteo*, Catesby, Carolina, i, 58, pl. 58).—LATHAM, Index Orn., ii, 1790, 567.
- Parus virginianus* STEPHENS, Shaw's Gen. Zool., x, 1817, 50.
- [*Motacilla*] *cincta* GMELIN, Syst. Nat., i, 1788, 980 (based on *Belted Warbler* Pennant, Arctic Zool., ii, 408; Latham, Gen. Synop., ii, pt. 2, 487, etc.).—LATHAM, Index Orn., ii, 1790, 539.
- [*Motacilla*] *umbria* GMELIN, Syst. Nat., i, 1788, 959 (based on *Fauvette ombrée de la Louisiane* Buffon, Hist. Nat. Ois., v, 162, and *Fauvette tachetée de la Louisiane* Daubenton, Pl. Enl., pl. 709, fig. 1).
- [*Sylvia*] *umbria* LATHAM, Index Orn., ii, 1790, 518.
- [*Motacilla*] *pinguis* GMELIN, Syst. Nat., i, 1788, 973 (based on *Grasset Warbler* Pennant, Arct. Zool., ii, 1785, 411).
- [*Sylvia*] *pinguis* LATHAM, Index Orn., ii, 1790, 543.
- [*Sylvia*] *flavopygia* VIEILLOT, Ois. Am. Sept., ii, 1807, 47 (same basis as *Parus virginianus* Linnæus).
- Sylvia xanthorhoa* VIEILLOT, Nouv. Dict. d' Hist. Nat. xi, 1817, 180 (based on *Yellow-rump*, *Parus uropygeo luteo*, Catesby, Carolina, i, 58, pl. 58).
- Sylvia xanthorhoa* VIEILLOT, Enc. Méth., ii, 1823, 444.
- Dendroica coronata hooveri* MCGREGOR, Bull. Cooper Orn. Club, i, no. 2, Mar.-Apr. (pub. Mar. 15), 1899, 32 (Falo Alto, California, Apr. 16; coll. R. C. McGregor).—BISHOP, N. Am. Fauna, no. 19, 1900, 90 (Skagway, Glacier, Log Cabin, Caribou Crossing, etc., Alaska; crit.).

## DENDROICA AUDUBONI AUDUBONI (Townsend).

### AUDUBON'S WARBLER.

Similar to *D. coronata*, but throat yellow (in adults<sup>1</sup>) instead of white, and with more white on inner webs of rectrices; adult male with auricular region bluish gray instead of black, with a large and conspicuous

<sup>1</sup> In some young females in their first autumn or winter there is absolutely no trace of yellow on the throat. Such specimens can be distinguished from immature females of *D. coronata* only by the decidedly greater amount of white on the inner webs of the outermost rectrices, *D. auduboni* having four to five thus marked, while in *D. coronata* there are only two to three. As a rule, immature specimens of *D. auduboni* are very slightly grayer brown, and less distinctly streaked, above, but the difference is by no means constant.

white patch covering middle and greater wing-coverts, and with a white subterminal patch on inner webs of four to five outermost rectrices; females and young also with a white subterminal patch or spot on inner web of four to five outermost rectrices.

*Adult male in spring and summer.*—Above bluish slate-gray, streaked, except sometimes on supra-auricular region, occiput, and hindneck, with black, the streaks broadest on back, scapulars, and upper tail coverts, where partaking more of the character of triangular or wedge-shaped central spots; crown with a large central elongated patch of rich lemon or gamboge yellow; lower rump with a triangular patch of lighter lemon or canary yellow; wings black, the middle and greater coverts very broadly tipped with white, the latter also broadly edged with white, forming a large and conspicuous wing patch, the remiges narrowly edged with gray (broader on tertials); tail black with bluish gray edgings (becoming white on outermost rectrix); inner webs of four to five outermost rectrices with a large subterminal patch of white, decreasing in size inwardly; sides of head bluish slate-gray, like general color of upper parts, darkening (sometimes into nearly black) on suborbital region and lores, and relieved by a white spot on upper eyelid (sometimes small and restricted to posterior portion) and a larger one on lower eyelid; chin and throat bright lemon or gamboge yellow; chest black, or mixed black and gray; median portion of breast, together with abdomen and under tail-coverts, white; sides of breast, next to median white space, black, forming a large patch, confluent anteriorly with the black or partly black jugular area, and continued posteriorly over sides and flanks in broad streaks; a large patch of yellow on each side of breast outside the black area; bill black; iris brown; legs and feet dark brown or brownish black.

*Adult male in autumn or winter.*—Much duller and browner than the summer male, and showing much less of black, that of chest and sides mostly overlaid by broad tips or margins to the feathers of brownish white; gray of upper parts much obscured by a wash of brown, and white wing-markings tinged with brown.

*Adult female in spring and summer.*—Essentially like the summer male in coloration, but much duller and with less of black on under parts; gray of upper parts duller, usually more or less tinged with brown; yellow crown patch smaller, more or less broken by brown or brownish gray tips to feathers; middle and greater wing-coverts more narrowly tipped with duller white or pale brownish gray, the latter not edged with white; yellow of throat paler, usually passing into white on chin; chest and sides of breast white or pale grayish, more or less heavily spotted or clouded with black; lateral pectoral patches smaller and paler yellow.

*Adult female in autumn and winter.*—Similar to the winter male, but smaller and still duller in color, the back without sharply defined



streaks of black, yellow of throat and lateral pectoral patches paler and more restricted, and chest and sides of breast without sharply defined partly concealed black spots.

*Young male in first autumn and winter.*—Similar to the winter female and not with certainty distinguishable (?), but with throat very slightly tinged with yellow, sometimes without a trace of this color.<sup>1</sup>

*Young, first plumage.*—Above thickly streaked with dusky on a pale brownish gray ground color, the latter here and there inclining to grayish white, the streaks broader and more blackish on back and scapulars; lower rump grayish white, narrowly streaked with dusky; under parts grayish white, everywhere streaked with dusky.

*Adult male.*—Length (skins), 122–137 (130); wing, 75–81 (77.3); tail, 53–61.5 (58.3); exposed culmen, 10–11 (10.5); tarsus, 18–22 (20.5); middle toe, 11.5–14 (12.5).<sup>2</sup>

*Adult female.*—Length (skins), 122–129 (126.1); wing, 73–78 (75.4); tail, 54–59 (56.7); exposed culmen, 10–11 (10.3); tarsus, 19–21 (20.1); middle toe, 11.5–13.5 (12.3).<sup>3</sup>

Western North America, north to British Columbia, east to western border of the Great Plains; breeding southward (in coniferous woods on high mountains) to southern California (Los Angeles and San Bernardino counties), northern Arizona, and New Mexico, eastward to western Nebraska (Sioux County), Wyoming (Black Hills, etc.) and Colorado; wintering from western United States (in lower valleys) southward over whole of Mexico (including Lower California) to highlands of Guatemala (Totonicapam; San Gerónimo), eastward to western Texas (Concho and Tom Green counties, Ft. Davis, etc.), western Kansas, etc.; accidental in Massachusetts (Cambridge, 1 spec., Nov. 15, 1876) and Pennsylvania.

*Sylvia auduboni* TOWNSEND, Journ. Ac. Nat. Sci. Phila., vii, 1837, 191 ("forests of the Columbia River;" type in coll. U. S. Nat. Mus.); viii, 1839, 153.

*Sylvia audubonii* AUDUBON, Orn. Biog., v, 1839, 52, pl. 395.

*Sylvicola auduboni* BONAPARTE, Geog. and Comp. List, 1838, 21.—AUDUBON, Synopsis, 1839, 52.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 414.—GAMBEL, Proc. Ac. Nat. Sci. Phila., iii, 1846, 155; Journ. Ac. Nat. Sci. Phila., i, 1847, 37.

*Sylvicola audubonii* AUDUBON, Birds Am., oct. ed., ii, 1841, 26, pl. 77.—WOODHOUSE, in Sitgreaves' Rep. Zúñi and Col. R., 1853, 71.

*M[niotilta] auduboni* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *auduboni* GRAY, Hand-list, i, 1869, 240, no. 3467.

*Dendroica auduboni* SCLATER, Proc. Zool. Soc. Lond., 1858, 295, 298 (La Parada, Oaxaco, s. Mexico).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 229, pl. 13, fig. 1.—RIDGWAY, Bull. Essex Inst., vii, 1875, 12, 17 (Carson City and Truckee Valley, Nevada, winter).—HENSHAW, Zool. Exp. W.

<sup>1</sup> In this stage to be distinguished from the corresponding stage of *D. coronata* by having white subterminal spots on four to five, instead of two to three, outermost rectrices.

<sup>2</sup> Twelve specimens.

<sup>3</sup> Eight specimens.

100th Merid., 1875, 194 (localities in Utah, Colorado, New Mexico, and Arizona; habits). BREWER, Proc. Bost. Soc. N. H., xix, 1878, 303 (Cambridge, Massachusetts, 1 spec., Nov. 15, 1876). AMERICAN ORNITHOLOGISTS' U. S. N. Check List, 1886, no. 656.—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 137 (Puebla, Mexico, Dec.).—AILEN, Bull. Am. Mus. N. H., i, 1886, 257 (Cambridge, Massachusetts, 1 spec., Nov. 15, 1876).—BRYANT, Bull. Cal. Ac. Sci., ii, 1887, 307 (Guadalupe I., Lower California, 2 spec., Dec., Jan.). COOKE, Bird Migr. Miss. Val., 1888, 248 (w. Kargas, San Angelo, Texas, May 3 and Oct. 1; Tom Green and Concho counties, Texas, in fall, Fort Davis, Texas, Nov. 3).—BEIDING, Land Birds Pacific Distr., 1890, 210 (breeding in San Bernardino Mts., etc., California).—MEARNS, Auk, vii, 1890, 261 (Mogollon Mts., Arizona, breeding).—GOSS, Birds Kansas, 1891, 553 (w. Kansas during migration).—PALMER (T. S.), Auk, ix, 1892, 310 (Stevens Prairie, Grays Harbor, Washington, Apr. 22, 1 spec., Aberdeen, abt. Aug. 14).—JOY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (Guadalupe, Mexico, "common all winter").—NEHRLING, Our Native Birds, etc., i, 1893, 207.—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 54 (British Columbia).—GRINSELL, Pub. ii, Pasadena Ac. Sci., 1898, 45 (Los Angeles County, California, summer resid. in higher mountains).—MERRILL, Auk, xv, 1898, 18 (Fr. Sherman, n. w. Idaho, breeding; descr. nest and eggs).—NELSON, N. Am. Fauna, no. 14, 1899, 56 (Tres Marias Islands, May).—CLARY, Auk, xviii, 1901, 237 (Black Hills, Wyoming, breeding).—BARLOW, Condor, iii, 1901, 177 (high Sierra Nevada, breeding, descr. nest and eggs).—BRUNER, Proc. Nebr. Orn., Un., 2d ann. meet., 1901, 57 (Sioux County, w. Nebraska, breeding).—CRAWFORD, Proc. Nebr. Orn. Un., 2d ann. meet., 1901, 78 (Sioux County, w. Nebraska, breeding).

*Dendroica auduboni* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 273, Cat. N. Am. Birds, 1859, no. 195; Rep. U. S. and Mex. Bound. Surv., ii, pt. ii, 1859, 10 (Janos and Boca Grande, Mexico, San Bernardino, California); Review Am. Birds, 1865, 188 (Mazatlan, Tonila, Jalisco).—COOPER and SICKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 181 (Straits of Fuca, Fort Steilacoom, etc., Washington).—SCHMIDT, Mem. Bost. Soc. N. H., i, 1869, 547 (Tecmaluca, near Orizaba, Vera Cruz, in winter).—HENSEHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 58 (Denver, Colorado, May 7-17), 75 (near Fort Garland, Colorado, June), 102 (Apache, Arizona, Sept. 1, and Gila R., New Mexico, Oct. 11).

*Dendroica auduboni* SCLATER, Proc. Zool. Soc. Lond., 1860, 250 (Orizaba, Vera Cruz); 1864, 172 (City of Mexico); Cat. Am. Birds, 1862, 30 (Mexico).—SALVIN and SCLATER, Ibis, 1860, 273 (near Totomcapam and San Gerónimo, Guatemala, Nov.).—BROWN, Ibis, 1868, 420 (Vancouver I.).—COATES, Check List, 1873, no. 79, 2d ed., 1882, no. 120; Birds Col. Val., 1878, 271. TROPE, in Coues' Birds N. W., 1874, 232 (Colorado, breeding from 9,500 ft. to timber line; habits; notes).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269 (Tepic; Mazatlan; Tonila, Jalisco).—RIDGWAY, Orn. 40th Parallel, 1877, 433 (localities in Nevada and Utah, breeding in pine belt on mountains, wintering in valleys).—FRAZER, Bull. Nutt. Orn. Club, ii, 1877, 27 (Cambridge, Mass., 1 spec., Nov.).—SCOTT, Bull. Nutt. Orn. Club, iv, 1879, 92 (Lake Co., Colorado; descr. nest and eggs).—MINOT, Bull. Nutt. Orn. Club, v, 1880, 220 (Seven Lakes, Colorado; descr. nest and eggs).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1880, 128.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 96.—MERRILL, Bull. Nutt. Orn. Club, vi, 1881, 205 (Big Horn Mts., Montana, descr. nest and eggs).—BEIDING, Proc. U. S. Nat. Mus., vi, 1883, 317 (Victoria Mts., Lower California, winter), 537 (La Paz).—GOSS, Bull. Nutt.

- Orn. Club, viii, 1883, 187 (Fort Wallace, w. Kansas, 2 specs., May 27); Auk, i, 1884, 100 (Wallace, w. Kansas, several in Oct.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 315, 650 (La Parada, Oaxaca; Ciudad Durango; Presidio, near Mazatlan; Totonicapam and San Gerónimo, Guatemala, etc.).
- [*Dendroica*] *auduboni* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.
- D[endræca]* *auduboni* COUES, Key N. Am. Birds, 2d ed., 1884, 302.
- Dendroica audubonii* COUES, Proc. Ac. Nat. Sci. Phila., xv, 1866, 69 (Fort Whipple, Arizona); Birds N. W., 1874, 58.—COOPER, Orn. Cal., 1870, 88.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 96.
- [*Dendroica*] *audubonii* COUES, Key N. Am. Birds, 1872, 100.
- Dendroica audubonii* SCLATER, Cat. Am. Birds, 1862, 30 (California; Mexico).
- Dendroica audubonis* BAIRD, Ives' Rep. Col. R., pt. vi, 1861, 5.
- Dendroica auduboni* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 613 (monogr.).
- Dendroica coronata* . . . var. *auduboni* RIDGWAY, Bull. Essex Inst., v, Nov., 1873, 180 (Colorado).
- [*Dendroica coronata*] var. *auduboni* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 219.
- (?) *Dendroica coronata* (not *Motacilla coronata* Gmelin?) BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 137 (Chiricahua Mts., Arizona, Mar.; crit.).

### DENDROICA AUDUBONI NIGRIFRONS<sup>1</sup> (Brewster).

#### BLACK-FRONTED WARBLER.

Similar to *D. a. auduboni*, but larger and much darker in color. Adult male in spring and summer with forehead, sides of crown, and auricular region black, instead of bluish slate-gray; back black, with feathers narrowly margined with bluish gray; foreneck, chest, whole breast (except lower median portion and lateral yellow patches) uniform black. Winter male with less black on upper parts, the forehead merely streaked with black, but differing from the same stage of *D. a. auduboni* in having the bluish gray of upper parts very little, if any, stained with brown, and the black of under parts merely broken by rather narrow whitish tips to the feathers. Adult female more heavily streaked with black above on a darker ground color. Young (in first plumage) much more heavily streaked with dusky, both above and below.

*Adult male*.—Length (skins), 127–141 (137.7); wing, 77.5–84.1 (80.5);<sup>2</sup> tail, 57.9–64.3 (62); exposed culmen, 9.4–9.6 (9.5); tarsus, 19–19.6 (19.3); middle toe, 12.4–12.9 (12.7).<sup>3</sup>

<sup>1</sup>A breeding male from mountains near head of Pecos River, New Mexico, is exactly intermediate between *D. auduboni* and *D. nigrifrons*, thus proving intergradation between the two forms.

<sup>2</sup>Four of the specimens measured are in worn midsummer plumage with tips of primaries abraded; specimens in good plumage would show considerably greater average length of wing.

<sup>3</sup>Five specimens.

*Adult female*.—Length (skins), 127–129.5 (128.3); wing, 75.4–77.2 (76.2); tail, 57.4–59.7 (60.7); exposed culmen, 8.9–9.6 (9.4); tarsus, 18.5–19 (18.8); middle toe, 11.9–13.2 (12.7).<sup>1</sup>

*Dendroica nigrifrons* BREWSTER, Descr. Sup. New Species Birds from Western N. Am. and Mexico, Jan. 31, 1889, 94; Auk, vi, no. 2, Apr., 1889, 94 (Pinos Altos, Chihuahua, Mexico; coll. W. Brewster); Auk, ix, 1892, pl. 1.—[ALLEN]. Auk, ix, 1892, 207.—LOOMIS, Auk, xviii, 1901, 109 (Chiricahua and Huachuca Mts., s. Arizona, June).

Mountains of southern Arizona (Chiricahua and Huachuco ranges) and southward through mountains of Chihuahua to Durango (El Salto, July; Cerro Prieto, Sept.).

#### DENDROICA AUDUBONI GOLDMANI (Nelson).

##### GOLDMAN'S WARBLER.

Similar to *D. a. nigrifrons*, but still darker. Adult male in winter plumage with entire head (except yellow crown patch, chin, and throat) uniform deep black; yellow crown-patch passing posteriorly into a white occipital spot; chin and a large spot at postero-lateral portion of throat also white.

*Adult male*.—Length (skin), 139.7; wing, 82.8; tail, 66.3; exposed culmen, 10.2; tarsus, 19.8; middle toe, 14.<sup>2</sup>

Highlands of western Guatemala (Hacienda Chancol, January 4).

*Dendroica goldmani* NELSON, Auk, xiv, Jan., 1897, 66 (Hacienda Chancol, Guatemala; coll. U. S. Nat. Mus.)

malar stripe of white, extending from base of mandible to sides of neck, anteriorly confluent on chin; whole throat and chest uniform black; rest of under parts white, broadly streaked laterally with black; hindneck, back, scapulars, rump, and upper tail-coverts slate-gray or plumbeous, more or less streaked (except on hindneck, and sometimes on rump) with black; wings and tail black or dusky with gray edgings, the middle and greater wing-coverts broadly tipped with white, forming two conspicuous wing-bands; inner webs of two outermost rectrices mostly (sometimes entirely) white, the third rectrix with terminal half or more white, the fourth also with more or less white on terminal portion; bill black; iris brown; legs and feet dusky brown, sometimes nearly black.

*Adult male in autumn and winter.*—Similar to the spring and summer plumage, but gray of upper parts tinged with brown, and with black streaks apparent only on back and upper tail-coverts, where more or less concealed.

*Adult female in spring and summer.*—Sometimes scarcely different from the adult male, having the pileum and whole throat uniform black, as in that sex, but with gray of upper parts duller; usually, however, with the pileum gray (except laterally), streaked with black; the throat mostly white (the feathers dusky or grayish beneath the surface) with more or less of a black or dusky patch on each side of lower throat; white of under parts less pure, with streaks on sides and flanks narrower and less deeply black (grayish dusky); gray of upper parts duller, with dusky streaks on back and upper tail-coverts much narrower, sometimes nearly obsolete.

*Adult female in fall and winter.*—Similar to the summer dress but plumage much softer, and dusky streaks on back and upper tail-coverts obsolete or entirely wanting.

*Young male in first autumn and winter.*—Similar to the adult male of corresponding season, but gray of upper parts more strongly washed with brown, pileum brownish gray except laterally and anteriorly, streaks on back and upper tail-coverts obsolete or concealed, black of throat broken by whitish tips to the feathers, and white of under parts tinged with yellowish.

*Young female in first autumn and winter.*—Above plain brownish gray (mouse gray), including pileum, the latter margined laterally with dusky; otherwise as in adult female of corresponding season, but general dull white of under parts strongly tinged with brown, especially on sides and flanks, where the dusky streaks are less distinct.

*Adult male.*—Length (skins), 105–118 (112.5); wing, 59.6–66.6 (62.2); tail, 48.8–55 (50.5); exposed culmen, 8.2–9.6 (9.2); tarsus, 16.8–18.8 (17.7); middle toe, 9.8–11.2 (10.3).<sup>1</sup>

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<sup>1</sup> Ten specimens.

*Adult female.* Length (skins), 107-122 (111.9); wing, 54.2-62.8 (59.1); tail, 47.51 (48.9); exposed culmen, 8.4-9.6 (9.1); tarsus, 16.6-17.6 (17.3); middle toe, 9.6-10.8 (10.1).<sup>1</sup>

Western United States, north to Colorado (El Paso County; Fort Garland), Utah (Uintah Mountains), Nevada (East Humboldt Mountains), and Vancouver Island; breeding southward to southern California (mountains of Los Angeles and San Bernardino counties), Lower California (San Pedro Martir Mountains), and southern Arizona (Santa Catalina and Santa Rita mountains); in winter southward through Mexico to States of Oaxaca and Vera Cruz.

*Sylvia nigrescens* TOWNSEND, Journ. Ac. Nat. Sci. Phila., vii, 1837, 191 ("forests of the Columbia River;" type now in coll. U. S. Nat. Mus.); Narrative, 1839, 341. AUDUBON, Orn. Biog., v, 1839, 57, pl. 395; Synopsis, 1839, 60.

*Thraupis nigrescens* BONAPARTE, Geog. and Comp. List, 1838, 21.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 471.

*Sylviola nigrescens* AUDUBON, Birds Am., oct. ed., ii, 1841, 62, pl. 94.—DEGGS, La Naturaleza, i, 1869, 141 (Guamajuato, Mexico).

[*Sylviola*] *nigrescens* BONAPARTE, Consp. Av., i, 1850, 308.

[*motilla*] *nigrescens* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *nigrescens* GRAY, Hand-list, i, 1869, 240, no. 3470.

[*Humaphys*] *nigrescens* CABANIS, Mus. Hein., i, 1850, 20 (Mexico).

*Dendroica nigrescens* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 270; Cat. N. Am.

Birds, 1859, no. 192; Review Am. Birds, 1865, 186. SCIATER, Proc. Zool.

Soc. Lond., 1858, 298 (La Parada, Oaxaca), 1859, 374 (Oaxaca, Mar.)—

HENRY, Proc. Ac. Nat. Sci. Phila., xi, 1859, 106 (New Mexico).—HELM-

MANN, Rep. Pacific R. R. Surv., x, 1859, 40 (localities in California).—

XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 191 (Fort Tejon, California).—

COOPER and SICKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 180 (Puget

Sound and Fort Steilacoom, Washington).—SMITHRAST, Mem. Bost. Soc.

N. H., i, 1869, 547 (Orizaba, Vera Cruz, winter).—AIKEN, Proc. Bost. Soc.

N. H., xv, 1872, 197 (El Paso Co., Colorado).—RINGWAY, Bull. Essex Inst.,

v, 1873, 180 (Colorado), vii, 1875, 20 (e. Humboldt Mts., Nevada, breeding),

32 (Wasatch Mts., Utah, breeding).—BAIRD, BREWER, and RINGWAY, Hist.

N. Am. Birds, i, 1874, 258, pl. 12, fig. 8; iii, 1874, 506 (El Paso Co., Colo-

rado).—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 75 (Fort

Garland, Colorado, June 25), 103 (Apache and White Mts., Arizona, Aug.,

Sept.). Zool. Exp. W. 100th Merid., 1875, 198 (Santa Fe, New Mexico, Aug.

<sup>1</sup> Eight specimens.

Specimens from the Pacific coast district average slightly smaller than those from the Rocky Mountain plateau, averages of two series being as follows.

Locality.	Wing	Tail	Ex- posed culmen	Tarsus	Middle toe
MALES.					
Five adult males from California and Oregon . . . . .	61.9	49.4	9.3	17.4	10.4
Five adult males from Arizona . . . . .	62.6	51.8	9.1	17.9	10.9
FEMALES.					
Three adult females from California and Lower California . . . . .	57.7	49	9.5	17.5	10.5
Five adult females from Arizona . . . . .	59.9	49.8	8.9	17.2	9.8



16; Camp Apache, Camp Crittenden, Bowie Agency, and White Mts., Arizona, Aug.).—ANTHONY, Auk, iii, 1886, 170 (Washington Co., Oregon, breeding); Zoe, iv, 1893, 244 (San Pedro Martir Mts., Lower California, breeding in pine belt).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 665.—TOWNSEND, Proc. U. S. Nat. Mus., x, 1887, 223 (n. California; descr. nest and eggs).—SCOTT, Auk, v, 1888, 35 (Catalina Mts., s. Arizona, breeding).—BELDING, Land Birds Pacific Distr., 1890, 212 (breeding in San Bernardino Mts., California).—NEHRLING, Our Native Birds, etc., i, 1893, 225.—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 54 (Vancouver I.).—GRINNELL (J.), Pub. ii, Pasadena Ac. Sci., 1898, 45 (Los Angeles Co., California, summer resid. on mts. up to 6,000 ft.).

*D[endroica] nigrescens* RIDGWAY, Man. N. Am. Birds, 1887, 507.

*Dendroica nigrescens* SCLATER, Cat. Am. Birds, 1862, 30 (Oaxaca).—COUES, Ibis, 1865, 163 (Arizona); Proc. Ac. Nat. Sci. Phila., xviii, 1866, 69 (Fort Whipple, Arizona); Check List, 1873, no. 75; 2d ed., 1882, no. 116; Birds N. W., 1874, 55, 232; Birds Col. Val., 1878, 263.—COOPER, Orn. Cal. 1870, 90.—RIDGWAY, Orn. 40th Parallel, 1877, 433 (e. Humboldt and Ruby Mts., Nevada, and Uintah Mts., Utah; breeding); Nom. N. Am. Birds, 1881, no. 105.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 136.—BREWSTER, Auk, ii, 1885, 197 (Santa Rita Mts., Arizona; descr. young female).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 291, 646 (Puebla, Mazatlan, Presidio, etc., Mexico, etc.).

*Dendroica nigrescens* SUNDEVALL, Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 610 (monogr.).

[*Dendroica*] *nigrescens* COUES, Key N. Am. Birds, 1872, 98.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.

*D[endroica] nigrescens* COUES, Key N. Am. Birds, 2d ed., 1884, 300.

*Sylvicola tristis* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 472 (mouth of Wilamette River, Oregon).

*Sylvia halsei* GIRAUD, Sixteen Species Texas Birds, 1841, fol. 11, pl. 3, fig. 1 (=autumnal female; type now in coll. U. S. Nat. Mus.).

*Sylvicola nigricans* (lapsus for *nigrescens*) HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 309 (New Mexico).

## DENDROICA TOWNSENDI (Townsend).

### TOWNSEND'S WARBLER.

*Adult male in spring and summer.*—Pileum, hindneck, loreal and auricular regions, chin, throat, and upper chest uniform black; a broad superciliary stripe, broad malar stripe (curving upward behind auricular region, and confluent with posterior extremity of the superciliary stripe), a suborbital spot, lower chest, and breast clear lemon yellow; abdomen, flanks, and under tail-coverts white; sides and flanks heavily streaked with black, the more anterior streaks confluent with the black throat-patch at its latero-posterior angles; under tail-coverts with a median streak of blackish; back, scapulars, rump, and shorter upper tail-coverts yellowish olive-green, each feather with a central, more or less wedge-shaped or sagittate spot of black, these markings more or less concealed on rump; longer upper tail-coverts black centrally, broadly margined with slate-gray; wings and tail blackish with light-

gray edgings, the middle and greater wing-coverts broadly tipped with white, forming two conspicuous bars across wing; inner webs of three lateral rectrices extensively white terminally, this occupying the terminal half or more of the outermost rectrix; bill blackish, with paler tomia; iris brown; legs and feet dark horn brownish (in dried skins).

*Adult male in autumn and winter.*—Similar to the spring and summer plumage, but all the black areas much broken or obscured; that of pileum and hindneck by broad olive-green margins to the feathers, the black forming mesial or central streaks, that of the auricular patch overlaid by olive-green tips to the feathers, and that of the throat replaced by nearly uniform lemon yellow, with black appearing as spots or blotches on sides of chest; black streaks of back, etc., more or less concealed.

*Young male in first autumn and winter.*—Similar to the adult male of corresponding season, but black streaks on pileum, back, etc., obsolete, and yellow of throat paler.

*Adult female in spring and summer.*—Very similar in coloration to the autumn and winter adult male, but black streaks on upper parts much narrower (sometimes nearly obsolete, usually mere shaft-lines), the streaks on sides also usually narrower, sometimes indistinct; pileum sometimes blackish, and throat often blotched with black, occasionally extensively so.

*Adult female in autumn and winter.*—Similar to the spring and summer plumage, but upper parts slightly browner olive-green, with the streaks obsolete, or nearly so; sides and flanks tinged with brownish.

*Young female in first autumn and winter.*—Similar to the adult female of corresponding season, but the yellow paler and the markings in general less distinct.



- Sylvia townsendi* ("Nuttall") TOWNSEND, Journ. Ac. Nat. Sci. Phila., vii, pt. ii, 1837, 191 ("forests of the Columbia River"), viii, 1839, 153.—AUDUBON, Orn. Biog., v, 1839, 38, pl. 393, fig. 1.
- Sylveola townsendi* BONAPARTE, Geog. and Comp. List, 1838, 23.—AUDUBON, Synopsis, 1839, 59; Birds Am., 2d ed., ii, 1841, 59, pl. 92.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., 1840, 440.
- [*Sylveola*] *townsendi* BONAPARTE, Consp. Av., i, 1850, 308.
- [*Mniotilta*] *townsendi* GRAY, Gen. Birds, i, 1848, 196.
- [*Mniotilta*] *townsendi* GRAY, Hand-list, i, 1869, 240, no. 3469.
- Sylveola townsendi* FINCH, Abh. nat. Ver. Brem., iii, 1872, 35 (Alaska).
- Dendroica townsendi* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 269, Cy. N. Am. Birds, 1859, no. 191, Review Am. Birds, 1865, 185.—SCLATER and SALVIN, Ibis, 1859, 11 (Dueñas, Guatemala, winter).—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 179 (Shoalwater Bay, Washington; California).—TURNBULL, Birds E. Pennsylvania and New Jersey, 1869, 53 (near Philadelphia, Pennsylvania, accidental).—NELSON, N. Am. Fauna, no. 14, 1899, 56 (Tres Marias Islands, May).
- Dendroica townsendi* SCLATER, Proc. Zool. Soc. Lond., 1858, 295, 298 (highlands of Oaxaca in winter), 1859, 374 (Totontepec, Oaxaca, Jan.)—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 265, pl. 12, fig. 7; iii, 1874, 506 (Cuyamaca Mts., s. California, Apr.).—HENSCHAW, Zool. Exp. W. 100th Merid., 1875, 200 (Conejos and mouth of Navajo Creek, Colorado, Aug., Sept.; Mount Graham, Arizona, Sept. 24-29).—RIDGWAY, Bull. Essex Inst., vii, 1875, 22 (e. Humboldt Mts., Nevada, Sept. 8, 24 (Thousand Spring Valley, Nevada, Sept. 24).—BENDIRE, Proc. Bost. Soc. N. H., 1877, 114 (Camp Harney, e. Oregon, breeding, descr. nest and eggs).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 668.—LLOYD, Auk, iv, 1887, 286 (Tom Green Co., Texas, breeding?).—NELSON, Rep. Nat. Hist. Coll. Alaska, 1897, 203 (upper Dejah Valley and Sitka, Alaska).—SCOTT, Auk, v, 1888, 35 (Pinal and Catalina Mts., Arizona, Sept., Nov.).—COOKE, Bird Migr. Miss. Val., 1888, 254 (San Angelo and Tom Green Co., Texas).—NEHRLING, Our Native Birds, etc., i, 1893, 230.—ARTHUR, Zee, iv, 1893, 244 (San Pedro Martir Mts., Lower California, Apr. 23; Valledares, May 3); Auk, xii, 1895, 142 (San Fernando, Lower California, 1 spec., May 7).—GRINNELL, Rep. Birds Santa Barbara, etc., 1897, 7 (Santa Barbara I., California, May 16); Auk, xv, 1898, 129 (Sitka, Alaska, 3 specs., Aug. 14).—MERRILL, Auk, xv, 1898, 19 (Fort Sherman, n. w. Idaho, May, June).—BISHOP, N. Am. Fauna, no. 19, 1900, 80 (Skagway, Alaska, May 31; Glacier, s. and Lake Marsh and w. shore Lake Lebarge, Alaska).—OSGOOD, N. Am. Fauna, no. 21, 1901, 49 (Queen Charlotte Islands, Apr., July).
- [*Dendroica*] *townsendi* RIDGWAY, Man. N. Am. Birds, 1857, 512.
- Dendroica townsendi* COUES, Ibis, 1865, 163 (Arizona); Bull. Nutt. Orn. Club, iv, 1879, 117 (Santa Cruz, California, Nov. 3 to Jan. 1); Check List, 2d ed., 1882, no. 114; Birds Col. Val., 1878, 260.—SCLATER, Ibis, 1865, 89 (crit.).—RIDGWAY, Orn. 40th Parallel, 1877, 432 (Nevada), Nom. N. Am. Birds, 1881, no. 108.—SALVIN and GODMAN, Biol. Centr. Am., Aves, i, 1881, 141 (Volcan de Fuego and Coban, Guatemala, etc.).—BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 138 (Tucson and Santa Rita Mts., Arizona, Apr., May).—BELDING, Proc. U. S. Nat. Mus., v, 1883, 545 (Miraflores, Lower California).—HENSCHAW, Auk, ii, 1885, 331 (upper Pecos R., New Mexico, fall migr.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 299, 647.
- Dendroica townsendi* SCLATER, Cat. Am. Birds, 1862, 29 (Oaxaca; Dueñas, Guatemala).—COOPER, Orn. Cal., 1870, 91.—COUES, Check List, 1873, no. 73.

*Dendroeca townsendi* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 610 (monogr.).

[*Dendroeca*] *townsendii* COUES, Key N. Am. Birds, 1872, 98.

[*Dendroeca*] *townsendi* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.

[*Dendroeca*] *townsendi* COUES, Key N. Am. Birds, 2d ed., 1884, 290.

#### DENDROICA VIRENS (Gmelin).

##### BLACK-THROATED GREEN WARBLER.

*Adult male in spring and summer.*—Pileum, hindneck, back, scapulars, and rump plain yellowish olive-green, the back sometimes (more rarely the pileum and rump also) narrowly streaked with black, and the forehead sometimes with an elongated or oval median spot of yellowish; sides of head and neck, including whole malar region and a broad superciliary stripe, clear lemon-yellow, relieved by a more or less broad postocular streak of olive-green, this sometimes involving greater part of the auricular region; chin, throat, and chest (sometimes sides of breast also) uniform black, the first sometimes partly yellow; rest of under parts white or yellowish white, the breast usually tinged (sometimes strongly) with yellow; sides and flanks heavily streaked with black, the more anterior of these streaks usually confluent with the black throat-patch at its postero-lateral portions; wings and tail dusky with slate-gray edgings, the middle and greater wing-coverts broadly tipped with white, forming two conspicuous bars across wing; inner webs of two lateral rectrices mostly white, that of the third with a large white terminal spot, the two outermost with outer webs extensively white; bill blackish; iris brown; legs and feet dark horn brown (in dried skins).

*Adult male in autumn and winter.*—Similar to the spring and sum-

*Young male, first plumage.*—"Remiges and rectrices as in adult; greater and median wing-coverts just tipped with soiled white, forming two very narrow, indistinct wing-bands. Rest of upper parts dark slaty-brown, each feather of the back edged with bright greenish. Superciliary stripes (just meeting in a narrow line on the forehead), eyelids, maxillary line, and chin, bright yellow. Sides of head dark slate; under parts soiled white, each feather on the breast and sides with a terminal spot of black; on the throat and jugulum these spots become large blotches of dark slate, the feathers being just tipped and edged with light yellow. From a specimen in my collection shot at Cambridge, Massachusetts, July 30, 1875. Like most of the previously described young warblers, this bird has a narrow central line of yellow feathers extending down the throat and jugulum to the breast."<sup>1</sup>

*Adult male.*—Length (skins), 110–120 (113.6); wing, 61–64 (63.8); tail, 45–49 (47.8); exposed culmen, 9–10 (9.9); tarsus, 16–18 (17.3); middle toe, 9–11 (10.2).<sup>2</sup>

*Adult female.*—Length (skins), 104–115 (108.9); wing, 58–61 (60); tail, 45–47 (46); exposed culmen, 9–10 (9.7); tarsus, 16–19 (17.7); middle toe, 9–11 (10.1).<sup>3</sup>

Eastern North America; north to Nova Scotia, shores and islands of Gulf of St. Lawrence, Newfoundland, southern shores of Hudson Bay, etc.; breeding southward to mountains of Connecticut, New York, and Pennsylvania, northeastern Illinois (?), and along higher Alleghenies to eastern Tennessee (Roan Mountain, etc., 4,000 feet), western North Carolina (Black Mountains, above 5,000 feet), and northwestern South Carolina (Pickens County); west to edge of the Great Plains; in winter south to West Indies (Bahamas, Cuba, Isle of Pines, Jamaica, Dominica, Guadeloupe) and through eastern Mexico (including island of Cozumel) and Central America to Isthmus of Panama (Lion Hill Station, Panama Railroad). Accidental in southern Greenland (Julianshaab, one specimen, 1853) and Heligoland (October 1, 1858).

[*Motacilla*] *virens* GMELIN, Syst. Nat., i, pt. ii, 1788, 985 (based on *The Black-throated Green Warbler*, *Muscicapa viridis gulture nigro* Edwards, Gleanings Nat. Hist., ii, 190, pl. 300, up. fig.).

[*Sylvia*] *virens* LATHAM, Index Orn., ii, 1790, 537.—VIEILLOT, Ois. Am. Sept., ii, 1807, 33, pl. 92; Nouv. Dict. d'Hist. Nat., xi, 1817, 179; Enc. Méth., ii, 1823, 440.—WILSON, Am. Orn., ii, 1810, 127, pl. 17, fig. 3.—STEPHENS, Shaw's Gen. Zool., x, 1817, 740.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 192; Ann. Lyc., N. Y., ii, 1826, 80.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 376.—AUDUBON, Orn. Biog., iv, 1838, 70, pl. 399.—GÄTKE, Naumannia, 1858, 423 (Heligoland); Proc. Zool. Soc. Lond., 1860, 108 (do.).

*Sylvicola virens* JARDINE, ed. Wilson's Am. Orn., i, 1832, 279.—RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List, 1838, 22.—AUDUBON, Synopsis, 1839, 55; Birds Am., oct. ed., ii, 1841, 42, pl. 84.—

<sup>1</sup> Brewster, Bull. Nuttall Orn. Club, iii, 1878, p. 57.

<sup>2</sup> Nine specimens.

<sup>3</sup> Seven specimens.

- WOODHOUSE, Rep. Sitgreaves' Exp. Zool. and Col. R., 1853, 70 (Indian Territory and Texas). — REINHARDT, Journ. fur Orn., 1854, 426 (Greenland). — BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia). — BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).
- [*Sylvicola*] *viridis* BONAPARTE, Consp. Av., i, 1850, 307.
- [*motilla*] *varius* GRAY, Gen. Birds, i, 1848, 196.
- Mniotilta viridis* REINHARDT, Ibis, 1861, 5 (Julianshaab, Greenland).
- [*Mniotilta*] *viridis* GRAY, Hand. list, i, 1869, 240, no. 3482.
- [*Rhinomphala*] *viridis* CARANIS, Mus. Heim., i, 1850, 19 (Mexico).
- Rhinomphala viridis* GUNDLACH, Journ. fur Orn., 1855, 474 (Cuba). — SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Mexico).
- Dendroica virens* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 267, (Cat. N. Am. Birds, 1859, no. 180, Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 10 (China, Tamaulipas). Review Am. Birds, 1865, 182 (Mirador, Vera Cruz, Tactic and Coban, Guatemala). — SCLATER, Proc. Zool. Soc. Lond., 1858, 295 (Cordova, Vera Cruz), 1859, 373 (Talea and Playa Vicente, Oaxaca). — SCLATER and SALVIN, Ibis, 1859, 11 (Dueñas, Guatemala). — GUNDLACH, Journ. fur Orn., 1861, 326 (Cuba), 1872, 413, Repert. Fisco-Nat. Cuba, i, 1865, 233. — LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 293 (Lion Hill, Panama R. R.). — SMITHCHRIST, Mem. Bost. Soc. N. H., i, 1869, 546 (Vera Cruz winter). — FRANTZUS, Journ. fur Orn., 1869, 293 (Candelaria Mts., Costa Rica). — BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 261, pl. 12, fig. 4. — BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (New England, breeding). — RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 564 (Cozumel I., Yucatan). — Orn. Ills., i, 1889, 151. — RALPH, Trans. Oneida Hist. Soc., iii, 1886, 140 (Oneida Co., New York, breeding; descr. nest and eggs). — BREWSTER, Auk, iii, 1890, 174 (Black Mts., North Carolina, breeding above 5,000 ft.). — CORY, Auk, iv, 1886, 37; ix, 1892, 49 (Watlings I., Bahamas); Birds W. I., 1889, 57, Cat. W. I. Birds, 1892, 118 (Watlings I., Bahamas, Cuba, Isle of Pines, Jamaica; Dominica). — AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 667. — FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 137 (Tezuitlan, Puebla, Nov.). — COOKE, Bird Migr. Miss. Val., 1888, 253 (Mississippi Valley localities and dates). — PALMER (W.), Proc. U. S. Nat. Mus., xiii, 1890, 265 (Migan Islands). — SCOTT, Auk, vii, 1890, 20 (Tarpon Springs and Key West, Florida, rare migr.). — LOOMIS, Auk, vii, 1890, 128 (Pickens Co., South Carolina, breeding); viii, 1891, 331 (Cesars Head, South Carolina, breeding). — CHERRIE, Auk, vii, 1890, 336 (San Jose, Costa Rica 1 spec., Nov.), viii, 1891, 278 (Costa Rica). — STONE, Proc. Ac. Nat. Sci. Phil., 1891, 437 (Luzerne Co., Pennsylvania, breeding). — TODD, Auk, viii, 1891, 398 (Butler and Armstrong counties, Pennsylvania, breeding); x, 1893, 41, 45 (Indiana and Clearfield counties, Pennsylvania, breeding). — WHITE, Auk, x, 1893, 228 (Mackinac I., Michigan, abundant summer resid.). — JOY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (Chernavaca, Morelos, common, Sept.). — NEHRING, Our Native Birds, etc., i, 1893, 228, pl. 12, fig. 6. — RHOADS, Proc. Ac. Nat. Sci. Phil., 1895, 496 (Roan Mt., up to 4,000 ft., and Sawyers Springs, Tennessee, breeding). — YONGE, Auk, xiii, 1896, 284 (Pottsville, etc., Pennsylvania, breeding). — BAIRD, Auk, xiii, 1896, 296 (n. Elk Co., Pennsylvania, breeding). — RIVIS, Auk, xv, 1898, 136 (West Virginia, breeding in spruce belt). — FLEMING, Auk, xvii, 1901, 44 (Muskoka, etc., n. Ontario, common summer resid.).
- [*cerulea*] *viridis* RIDGWAY, Man. N. Am. Birds, 1887, 510.
- Dendroica virens* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz), Cat. Am. Birds, 1862, 29 (Guatemala), Ibis, 1865, 89 (crit.). — SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Lion Hill, Panama R. R.). — DRESSER, Ibis, 1865, 477 (San Antonio, Texas). — LAWRENCE, Ann. Lyc. N. Y.,

- ix, 1868, 94 (Grecia, Barranca, and Rancho Redondo, Costa Rica); Proc. U. S. Nat. Mus., i, 1878, 54, 486 (Dominica, Lesser Antilles); viii, 1885, 622 (Guadeloupe, Lesser Antilles).—SALVIN, Proc. Zool. Soc. Lond., 1870, 182 (Volcan de Chiriqui, Veragua).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269 (e. Florida, Mar.).—COUES, Check List, 1873, no. 71; 2d ed., 1882, no. 112; Birds N. W., 1874, 54; Birds Col. Val., 1878, 240.—NEWTON, Man. Nat. Hist. Greenl., 1875, 97 (Julianshaab, 1 spec., 1853).—CORDEAUX, Ibis, 1875, 180 (Heligoland, Oct. 1, 1858).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Santa Efigenia, Oaxaca, Dec., Jan.).—GUNDLACH, Orn. Cuba, 1876, 64.—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 57 (descr. young); Proc. Bost. Soc. N. H., xxii, 1883, 371 (Anticosti I. and Cape Breton, Nova Scotia, summer).—NEWTON, Proc. Zool. Soc. Lond., 1879, 552 (Jamaica).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 107.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 137 (San Gerónimo, Tactic, and Coban, Guatemala, etc.).—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 494 (Volcan de Irazú, Costa Rica).—BROWN (N. C.), Bull. Nutt. Orn. Club, vii, 1882, 36 (Boerne, s. w. Texas, Mar.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 297, 647 (n. Yucatan; Irazú district, Costa Rica, etc.).
- Dendroeca virens* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 611 (monogr.).
- [*Dendroeca*] *virens* COUES, Key N. Am. Birds, 1872, 97.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.—CORY, List Birds W. I., 1885, 8.
- D[endroeca] virens* NELSON, Bull. Essex Inst., viii, 1876, 100, 152 (n. e. Illinois, a few breeding).—NEWTON (A. and E.), Handb. Jamaica, 1881, 106.—COUES, Key N. Am. Birds, 2d ed., 1884, 298.

## DENDROICA CHRYSOPARIA Sclater and Salvin.

### GOLDEN-CHEEKED WARBLER.

*Adult male in spring and summer.*—Pileum, hindneck, back, scapulars, rump, and upper tail-coverts uniform black, usually slightly intermixed on rump with olive-green or gray, sometimes (in younger individuals?) the rump mostly or even wholly olive-green and the scapulars and interscapulars margined with olive-green;<sup>1</sup> center of forehead usually with a yellow spot or streak; sides of head and neck, including whole malar region, auricular region (except upper margin), and a broad superciliary stripe, clear rich lemon yellow, relieved by a postocular streak of black (widening into a spot behind auricular region) and a spot or line of black immediately in front of eye; chin, throat, upper chest, and sides of breast uniform black; rest of under parts white (without yellow tinge), the sides and flanks heavily streaked with black; wings and tail black, with narrow light gray edgings, the middle and greater wing-coverts broadly tipped with white, forming two distinct bands across wing; three outermost rectrices with inner webs mostly white, the fourth with a white spot near tip, the three outermost with outer webs edged with white toward base.

<sup>1</sup> Some spring males (perhaps birds of the preceding year) have the pileum uniform black only laterally, the feathers of the median portion being more or less broadly edged or margined with olive-green.

streak near tip, and the first with outer web largely white; chin, throat, and upper chest uniform black, this black area with a convex or truncated posterior outline;<sup>4</sup> rest of under parts white, usually faintly shaded laterally with gray and sometimes narrowly and indistinctly streaked on sides with dusky; bill blackish; iris brown; legs and feet dark horn brown, sometimes blackish (in dried skins).

*Adult male in autumn and winter.*—Similar to the spring and summer plumage, but yellow of crown and occiput more or less obscured by olive or olive-green tips to feathers, black streaks on back, etc., more or less concealed by broader grayish margins to feathers, and feathers of black throat-patch more or less tipped or margined with whitish.

*Young male in first autumn and winter.*—Above similar to the adult male of corresponding season, but black streaks on back, etc., narrower, more concealed, sometimes obsolete; whole pileum suffused or overlaid with a wash of olive or olive-green, and back more strongly tinged with olive; yellow on sides of head paler, less pure, the auricular region much tinged with olive; chin, throat, and upper chest dull whitish or pale yellowish, the feathers abruptly black or dusky beneath surface; rest of under parts soiled white, the sides and flanks strongly tinged with pale olive-brownish.

*Adult female in spring and summer.*—Above similar to the immature male above described, but forehead and crown largely (often mostly) yellow, and dusky streaks on back, etc., still narrower, often obsolete; under parts also similar, but body portions less tinged with brownish, the chest often with a dusky patch (its feathers tipped with whitish) extending more or less over throat, sometimes covering whole throat.

*Adult female in autumn and winter.*—Above plain grayish olive,



Pacific coast district of United States; breeding on higher mountains of California (El Dorado, Calaveras, Alpine, Placer, and Butte counties, etc.) and northward to British Columbia (chiefly west of the Cascade range); in winter south into Lower California and through Arizona over Mexican plateau to highlands of Guatemala (Volcan de Fuego; San Gerónimo; Alotepeque).

*Sylvia occidentalis* TOWNSEND, Journ. Ac. Nat. Sci. Phila., vii, 1837, 190 ("forests of the Columbia River;" type now in coll. U. S. Nat. Mus.); viii, 1839, 53.—AUDUBON, Orn. Biog., v, 1839, 55, pl. 395, figs. 3, 4.

*Sylvicola occidentalis* BONAPARTE, Geog. and Comp. List, 1838, 23.—AUDUBON, Synopsis, 1839, 60; Birds Am., oct. ed., ii, 1841, 60, pl. 93.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 445.

[*Sylvicola*] *occidentalis* BONAPARTE, Consp. Av., i, 1850, 308.

*M[niotilla]* *occidentalis* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilla*] *occidentalis* GRAY, Hand-list, i, 1869, 240, no. 3468.

*Dendroica occidentalis* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 268; Cat. N. Am. Birds, 1859, no. 190; Review Am. Birds, 1865, 183 (Mexico; Volcan de Fuego, Guatemala).—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. ii, 1860, 178 (Fort Steilacoom, Washington, June).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (Moyoapam, Vera Cruz, alt. 8,333 feet, winter).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 266, pl. 12, fig. 5; iii, 1874, 506 (Cuyamaca Mts., s. California, May).—RIDGWAY, Bull. Essex Inst., vii, 1875, 22 (e. Humboldt Mts., Nevada, Sept.).—HENSHAW, Zool. Exped. W. 100th Merid., 1875, 201 (Camp Crittenden and Mount Graham, Arizona, Aug. 30 to Sept. 22); Rep. Orn. Spec. Wheeler's Surv., 1876, 234 (head of Tule R., s. California, Oct. 9).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 669.—BREWSTER, Auk, iv, 1887, 166 (Blue Cañon, California, breeding; descr. nest and eggs).—MERRILL, Auk, v, 1888, 361 (Fort Klamath, Oregon, May).—BELDING, Land Birds Pacific Distr., 1890, 215 (breeding in Calaveras, Alpine, Placer, and Butte counties, California).—NEHRLING, Our Native Birds, etc., i, 1893, 231.—ANTHONY, Auk, xii, 1895, 142 (San Fernando, Lower California, May 16, 1 spec.).—GRINNELL, Rep. Birds Santa Barbara Is., etc., 1897, 7 (Santa Barbara I., California, May 14).—BARLOW, Auk, xvi, 1899, 156-161 (El Dorado Co., California; nesting habits; descr. nest and eggs); Condor, iii, 1901, 179 (high Sierra Nevada; habits; song; descr. nests and eggs).

*D[endroica]* *occidentalis* RIDGWAY, Man. N. Am. Birds, 1887, 513.

*Dendroica occidentalis* SCLATER, Ibis, 1865, 89 (crit.).—COUES, Ibis, 1865, 163 (Arizona); Proc. Ac. Nat. Sci. Phila., 1866, 69 (Fort Whipple, Arizona); Check List, 1873, no. 72; 2d ed., 1882, no. 113; Birds Col. Val., 1878, 258.—SALVIN, Ibis, 1866, 191 (Volcan de Fuego, San Gerónimo, and Alotepeque, Guatemala).—COOPER, Orn. Cal., 1870, 92.—RIDGWAY, Orn. 40th Parallel, 1877, 432 (e. Humboldt Mts., Nevada, Aug. 29, 1 spec.); Bull. Nutt. Orn. Club, iii, 1878, 65 (Calaveras Co., California, May); Nom. N. Am. Birds, 1881, no. 109.—BELDING, Proc. U. S. Nat. Mus., i, 1879, 405 (Calaveras Big Trees, May, July; Soda Springs, autumn; Stockton, May; habits).—SALVIN, and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 138.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 294, 647 (La Parada, Oaxaca, near City of Mexico, etc.).

[*Dendroica*] *occidentalis* COUES, Key N. Am. Birds, 1872, 98.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.

*D[endroica]* *occidentalis* COUES, Key, N. Am. Birds, 2d ed., 1884, 299.

*Dendroica occidentalis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 611 (monogr.).

*Dendroica peridental* (typographical error) COOPER, Am. Nat., lili, Nov., 1868, 480, footnote (Colorado Valley, California, May 27).

*Dendroica chrysoparia* (not of Sclater and Salvin, 1860) SCLATER, Proc. Zool. Soc. Lond., 1862, 19 (La Parada, Oaxaca); Cat. Am. Birds, 1862, 358 (do.).

*Dendroica nivicentris*, SALVIN, Proc. Zool. Soc. Lond., 1863, 187, pl. 24, fig. 2 (San Gerónimo, Guatemala; coll. Salvin and Godman).

#### DENDROICA RARA (Wilson).

##### CERULEAN WARBLER.

Wing less than 69; crown blue or greenish blue; auricular region blue or olive.

*Adult male (all seasons).*—Above grayish blue, brighter on the pileum, where approaching cerulean or azure; sides of hinder crown and occiput streaked with black, sometimes suffused into lateral patches; back and scapulars more or less broadly streaked with black; upper tail-coverts black, margined with grayish blue or bluish gray; wings and tail black with grayish blue edgings, the middle and greater coverts broadly tipped with white, forming two conspicuous bands; the inner webs of rectrices with a subterminal patch of white, largest on outermost; sides of head grayish blue, relieved by a more or less distinct postocular streak of dusky, this often margined above by a more or less distinct (sometimes conspicuous) supra-auricular streak of white; malar region and under parts white, the sides and flanks broadly streaked with dusky (more or less suffused, especially on sides of breast, with grayish blue), the chest usually crossed by a narrow band of blackish, more or less suffused with grayish blue, this band often interrupted in the middle, sometimes wanting; maxilla black, mandible grayish dusky (grayish blue in life); iris brown; legs and



*Young male, nestling plumage.*—Above uniform brownish gray (deep drab-gray), the pileum divided longitudinally by a broad median stripe of grayish white; sides of head (including a broad superciliary stripe) and entire under parts white; a narrow postocular stripe of deep drab-gray; wings as in adults, but edgings greenish rather than bluish.

[Autumnal and winter adults do not differ from spring and summer specimens except in being more highly colored. This is more evident in females, in which the superciliary stripe and under parts are often entirely pale sulphur or primrose yellow. I have not seen specimens which I am able to identify as young, of either sex, in first autumn or winter; possibly some of the yellower supposed adult females are in reality immature birds.]

Eastern United States, chiefly west of the Alleghenies; breeding northward to eastern Nebraska (Omaha), Minnesota, Wisconsin, Michigan (as far as Mackinac Island), Ontario (Drummondville, etc.), western and central New York (Niagara, Oneida, and Monroe counties), eastward to eastern Maryland (Baltimore County) and western Virginia (Natural Bridge), southward to Tennessee, Louisiana (Franklin and St. Tammany parishes), etc.; casually or irregularly northward to Connecticut (Suffield; Seymour), Rhode Island (Providence; Pawtucket), Long Island (Crow Hill), and New Jersey (Morris County); west regularly to edge of the Great Plains, occasionally to Rocky Mountains (Denver, Colorado; Rio Mimbres, New Mexico). In winter south to Cuba and Grand Cayman, and through eastern Mexico, Central America, and western South America (chiefly east of the Andes) to central Peru and Bolivia (Naipiri).

*Sylvia cerulea* (not *Sylvia cærlea* Latham, 1790) WILSON, Am. Orn., ii, 1810, 141, pl. 17, fig. 5 (e. Pennsylvania; coll. Peale Mus.).

*Sylvia cærulea* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 193.—LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 2 (see Cabanis, Journ. für Orn., 1863, 37).—THOMPSON, Nat. Hist. Vermont, 1853, 82.

*Sylvicola cærulea* JARDINE, ed. Wilson's Am. Orn., i, 1832, 283; iii, 387.—BONAPARTE, Geog. and Comp. List, 1838, 23.—HOY, Ann. Rep. Smithson. Inst. for 1864 (1865), 438 (Missouri).

[*Sylvicola*] *cærulea* BONAPARTE, Consp. Av., i, 1850, 308.

*Sylvicola cærulea* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—AUDUBON, Synopsis, 1839, 56; Birds Am., oct. ed., ii, 1841, 45, pl. 86.—WOODHOUSE, Rep. Sitgreaves' Expl. Zuñi and Col. R., 1853, 70 (common in Texas and Creek and Cherokee countries).—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin).—HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 309 (Rio Mimbres, New Mexico).—WILLIS, Ann. Rep. Smithson. Inst. for 1858 (1859), 282 ("Nova Scotia.")

*Rhimamphus cæruleus* SCLATER, Proc. Zool. Soc. Lond., 1857, 18 (Bogota, Colombia); 1858, 64 (Rio Napo, e. Ecuador).—GUNDLACH, Journ. für Orn., 1862, 177 (Cuba).

*Dendroica cærulea* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 280; Cat. N. Am. Birds, 1859, no. 201; Review Am. Birds, 1865, 191 (Coban, Guatemala; Bogota, Colombia, etc.).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba);

1872, 414 (do.); Repert. Fisico-Nat. Cuba, i, 1865, 234.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 235, pl. 13, figs. 10, 11; iii, 1874, 506 (Drummondville, Ontario, breeding; descr. nest and eggs).—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 196 (do.).—BREWSTER, Ann. Lyc. N. Y., xi, 1875, 134 (Ritchie Co., West Virginia, breeding; habits; descr. nest and eggs).—BREWER, Proc. Bost. Soc. N. H., xix, 1878, 303 (Suffield, Connecticut, 1 spec.).—BUTLER, Bull. Brooklyn Soc. N. H., ii, 1886, 35 (Franklin Co., Indiana, common summer resid.).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 658.—CORY, Auk, iii, 1886, 35 (West Indian references), 501 (Grand Cayman); Birds W. I., 1889, 49; Cat. W. I. Birds, 1892, 118 (Cuba; Grand Cayman).—LLOYD, Auk, iv, 1887, 296 (Tom Green Co., Texas, Oct.).—HASBROUCK, Auk, v, 1888, 323 (District Columbia, May 5, 1888); vii, 1890, 291 (same occurrence).—SCOTT, Auk, v, 1888, 313 (Garden Key, Tortugas, 1 spec., Mar. 23); vii, 1890, 19 (Key West, Florida, Apr. 16 and 29).—DAVISON, Auk, v, 1888, 430 (Niagara Co., New York, breeding).—EAMES, Auk, v, 1888, 431 (Seymour, Connecticut, 1 spec., May 10).—COOKE, Bird Migr. Miss. Val., 1888, 249 (Minnesota; e. Kansas; e. Nebraska; w. Texas, etc.; dates of migr.).—RIDGWAY, Orn. Illinois, i, 1889, 142.—GOSB, Birds Kansas, 1891, 556 (summer resid., common in e. rare in w. Kansas).—SMITH (R. W.), Journ. Cinc. Soc. N. H., 1891, 123 (Warren Co., n. e. Ohio, breeding).—LOOMIS, Auk, viii, 1891, 170 (Chester Co., South Carolina, Apr. 15 to May 3 and Oct. 4 to 26).—TODD, Auk, viii, 1891, 238 (Beaver Co., w. Pennsylvania, breeding); x, 1893, 41 (Indiana Co., w. Pennsylvania, breeding).—CHERRIE, Auk, ix, 1892, 21 (San Jose, Costa Rica, Aug. 24 to Oct. 24).—WHITE, Auk, x, 1893, 227 (Mackinac I., Michigan, rare summer resid.).—BRIMLEY, Auk, x, 1893, 244 (Raleigh, North Carolina, 1 spec., May 8, 1893).—DUTCHER, Auk, x, 1893, 277 (Crow Hill, Long Island, 1 spec.).—NEHRING, Our Native Birds, etc., i, 1893, 212, pl. 13, fig. 6.—McILWRAITH, Birds Ontario, 1894, 365 (s. Ontario, summer resid.).—ULREY and WALLACE, Proc. Indiana Ac. Sci., 1895, 156 (Wabash, Indiana, migratory).—RHODES, Proc. Ac. Nat. Sci. Phila., 1895, 495 (Samburg, Raleigh, and Bellevue, Tennessee, breeding); Auk, xvi, 1899, 313 (lowlands of Westmoreland Co., Pennsylvania, numerous, breeding).—PLEASANTS, Auk, x, 1893, 372 (Towson

- Point, New York, 1 spec., May 17).—RATHBUN, Revised List Birds Centr. N. Y., 1879, 11 (common summer resid.).—DEANE, Bull. Nutt. Orn. Club, iv, 1879, 185 (Providence, Rhode Island, 1 spec., May).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 98.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 130 (Mexico; Coban, Guatemala; Irazú, Costa Rica; Ecuador; Peru; Bolivia, etc.).—WEBSTER, Ornith. and Oolog., ix, 1884, 28 (Pawtucket, Rhode Island, 1 spec., May 22).—BUTLER, Ornith. and Oolog., ix, 1884, 26 (habits, etc.).—AGERSBORG, Auk, ii, 1885, 278 (s. e. South Dakota).—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 74 (Machay and Mapoto, Ecuador, Feb.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 327, 651 (Guatemala; Panama; Calovevora, Veragua; Bogota and Antioquia, Colombia; Sarayacu, e. Ecuador; Naipiri, Bolivia, etc.).
- Dendroica caerulea* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 614 (monogr.).
- Dendroica caerulea* COUES, Check List, 2d ed., 1882, no. 118.
- Dendroica caerulea* HENRY, Proc. Ac. Nat. Sci. Phila., xi, 1859, 106 (New Mexico).—HENSHAW, Rep. Orn. Spec. Wheeler's Survey, 1874, 58 (Denver, Colorado, May 17).
- Dendroica caerulea* LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Lion Hill, Panama R. R.); ix, 1869, 200 (Merida, Yucatan).—MCILWRAITH, Proc. Essex Inst., v, 1866, 86 (Hamilton, Ontario).—COUES, Birds N. W., 1874, 56, 233; Birds Col. Val., 1878, 267.—JOUY, Field and Forest, iii, 1877, 51 (District Columbia, 1 spec.).
- [*Dendroica*] *caerulea* COUES, Key N. Am. Birds, 1872, 99.—CORY, List Birds W. I., 1885, 8.
- D[endræca] caerulea* NELSON, Bull. Essex Inst., viii, 1876, 99, 152 (n. e. Illinois, rare sum. resid.).
- [*Dendræca*] *caerulea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.
- D[endræca] caerulea* COUES, Key N. Am. Birds, 2d ed., 1884, 301.
- [*Mniotilta*] *caerulea* GRAY, Hand-list, i, 1869, 240, no. 3473.
- [*Mniotilta*] *caerulea* GIEBEL, Thesaurus Orn., ii, 1875, 601.
- Dendræca caerula* TRIPPE, Proc. Bost. Soc. N. H., xv, 1872, 235 (Decatur and Mahaska counties, s. Iowa, breeding).
- Sylvia rara* WILSON, Am. Orn., iii, 1811, 119, pl. 27, fig. 2.—STEPHENS, Shaw's Gen. Zool., x, 1817, 657.—VIEILLLOT, Enc. Méth., ii, 1823, 448.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 197; Ann. Lyc. N. Y., ii, 1826, 82.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 393.—AUDUBON, Orn. Biog., i, 1831, 258, pl. 49.
- Phyllopneuste rara* BOIE, Isis, 1828, 321.
- Vermivora rara* JARDINE, ed. Wilson's Am. Orn., i, 1832, 406.
- M[niotilta] rara* GRAY, Gen. Birds, i, 1848, 196.
- Dendroica rara* RIDGWAY, Auk, xiv, Jan., 1897, 97.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xiv, 1897, 131.—JUDD, Auk, xiv, 1897, 326 (Boonton, Morris Co., New Jersey, Sept., 1887).—BEYER, Proc. Louisiana Soc. Nat., 1897-99 (1900), 113 (Louisiana, breeding in Franklin and St. Tammany parishes).
- Sylvia azurea* STEPHENS, Shaw's Gen. Zool., x, 1817, 653 (based on *Sylvia cerulea* Wilson).—BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 85; Am. Orn., ii, 1828, 27, pl. 11, fig. 2.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 407.—AUDUBON, Orn. Biog., i, 1831, 255, pl. 48.—(?) TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, 153 ("Oregon").
- Hypothymis azurea* BOIE, Isis, 1828, 318.
- Sylvia bifasciata* SAY, Long's Exp. Rocky Mts., i, 1823, 170 (Council Bluffs, Iowa).
- Sylvia populorum* VIEILLLOT, Enc. Méth., ii, 1823, 449 (based on *Sylvia cerulea* Wilson).

## DENDROICA BLACKBURNIÆ (Gmelin).

## BLACKBURNIAN WARBLER.

*Adult male in spring and summer.*—Pileum and hindneck black, relieved by an oval patch or broad stripe of cadmium yellow or orange on middle of crown; a broad superciliary stripe of cadmium yellow or orange, confluent posteriorly with a large patch of the same on side of neck; a spot of rather paler orange-yellow immediately beneath eye, including lower eyelid; loreal streak and auricular region black, the two connected by a narrow rictal streak; malar region, chin, throat, and chest rich orange or cadmium orange; remaining under parts pale yellowish or yellowish white (more decidedly yellowish on breast), the under tail-coverts white; sides and flanks streaked with black, these black streaks commencing at lower posterior extremity of auricular region; general color of upper parts black, the back streaked with whitish, especially the exterior row of interscapulars, which have most of their outer web whitish, forming, when feathers are properly arranged, two stripes along each side of back; feathers of rump and upper tail-coverts more or less distinctly edged with whitish; two to three outermost rectrices white, with black shafts and with a terminal guttate or cuneate mark of black; fourth rectrix also with much white on subterminal portion of inner web, and fifth sometimes with more or less of a white edging to subterminal portion of inner web; exposed portion of middle wing-coverts and innermost greater coverts white, forming a conspicuous patch on wing, the outermost greater coverts black, broadly tipped with white and narrowly edged with grayish; rectrices black or dusky, narrowly edged with olivaceous; these

patch; broad superciliary stripe, confluent with a patch on side of neck, pale Naples or maize yellow; auricular region and lores grayish olive or hair brown; malar region, chin, throat, and chest deep chrome yellow; rest of under parts dull yellowish white, more strongly tinged with yellowish on breast, the under tail coverts more nearly white, the longest sometimes with a narrow mesial streak of dusky; sides and flanks streaked with dusky; bill, iris, etc., as in adult male; length (skins), 107.9-116.8 (114); wing, 63-65.5 (64.3); tail, 46.2-47.5 (46.7); exposed culmen, 9.6; tarsus, 17.3-17.8 (17.5); middle toe, 10.9-11.9 (11.2).<sup>1</sup>

*Adult (?) male in autumn and winter.*—Similar to the summer female, but upper parts darker, becoming uniform black on rump and upper tail coverts, the latter margined with whitish; under parts of body more yellowish, with streaks on sides and flanks much broader as well as blacker.

*Young male in first autumn and winter.*—Similar to the summer female in coloration of upper parts, but without yellowish spot in center of crown; yellow of throat and chest much less orange (dull lemon chrome instead of deep chrome or pale cadmium).

*Adult female in autumn and winter.* Similar to the spring and summer plumage, but whole under parts (except under tail coverts) yellowish, not conspicuously deeper on throat and chest.

*Young female in first autumn and winter.* Similar to the adult female of corresponding season, but above browner, with streaks on back, etc., much less distinct, sometimes nearly obsolete; white wing-bands narrower; less white on lateral rectrices, the inner web of the outermost rectrix extensively dusky basally; under parts pale yellowish buff, deepest on chest, paler posteriorly, the sides and flanks indistinctly streaked with grayish brown.

*Young, first plumage.* Above deep hair brown, relieved by an indistinct paler longitudinal space in middle of crown and indistinct darker streaks on back and rump; broad superciliary stripe, sides of neck, malar region, chin, and throat very pale grayish buffy, chest similar but rather darker and more grayish, faintly spotted with a slightly darker shade; rest of under parts white, the sides and flanks spotted with hair brown; wings as in autumn or winter specimens, but white tips to greater and middle coverts tinged with brownish buff.

Eastern United States and more southern British Provinces; northward to Nova Scotia, Maine, northern Ontario (Muskoka, etc.), Manitoba (Trout Lake), and southern shores of Hudson Bay (Severn House); west to edge of Great Plains, casually to western Texas (Kendall County, March 31), New Mexico (Fort Bayard, May), and Utah (Ogden, September); breeding southward to Connecticut, New York

<sup>1</sup> Five specimens.

(Lewis and Oneida counties), Pennsylvania (Butler, Indiana, Clearfield, Pike, Luzerne, and Elk counties), Michigan, and northern Minnesota, and along Allegheny Mountains to western North Carolina (above 3,000 feet), South Carolina (Pickens County) and eastern Tennessee (Roan Mountain, 4,000 feet, and Chilhowee, Mountains, 2,000-4,000 feet). In winter southward through eastern Mexico (States of Vera Cruz and Oaxaca) and Central America to Colombia, Ecuador (numerous localities and records), Peru, and Venezuela, and to Bahama Islands (Watlings Island; New Providence). Accidental in southern Greenland (Frederickshaab, October, 1845)?

- (?) *Motacilla fusca* MÜLLER, Syst. Nat. Suppl., 1776, 175 (based on *Figuier étranger* Daubenton, Pl. Enl., pl. 58, fig. 3; Guiana; *Le Figuier orangé* Buffon, Hist. Nat. Ois., v, 313).
- (?) *Motacilla aurantia* BODDAERT, Tabl. Pl. Enl., 1783, 4 (based on *Figuier étranger* Daubenton, Pl. Enl., pl. 58, fig. 3; Guiana; *Le Figuier orangé* Buffon, Hist. Nat. Ois., v, 313).
- (?) *M[niotilta] aurantia* GRAY, Gen. Birds, i, 1848, 196.
- (?) [*Motacilla*] *chrysocephala* GMELIN, Syst. Nat., i, 1788, 971 (based on *Figuier étranger* Daubenton, Pl. Enl., pl. 58, fig. 3; Guiana; *Le Figuier orangé* Buffon, Hist. Nat. Ois., v, 313).
- (?) *Sylvia chrysocephala* LATHAM, Index Orn., ii, 1790, 541.—VIEILLLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 206; Enc. Méth., ii, 1823, 459.—STEPHENS, Shaw's Gen. Zool., x, 1817, 700.
- (?) [*Sylvicola*] *chrysocephala* BONAPARTE, Consp. Av., i, 1850, 309.
- (?) [*Motacilla*] *incana* GMELIN, Syst. Nat., i, pt. ii, 1788, 976 (New York; based on Greypoll Warbler LATHAM, Gen. Synop. Birds, ii, pt. 2, 1783, 461).
- (?) [*Sylvia*] *incana* LATHAM, Index Orn., ii, 1790, 527.
- (?) *Sylvia incana* VIEILLLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 224; Enc. Méth., ii, 1823, 442.—STEPHENS, Shaw's Gen. Zool., x, 1817, 628.
- (?) *M[niotilta] incana* GRAY, Gen. Birds, i, 1848, 196.
- [*Motacilla*] *blackburnia* GMELIN, Syst. Nat., i, pt. ii, 1788, 977 (based on *Black-*

*Dendroica blackburnia* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 274; Cat. N. Am. Birds, 1859, no. 196; Review Am. Birds, 1865, 189 (Coban, Guatemala; San Jose, Costa Rica).—SCLATER and SALVIN, Ibis, 1859, 11 (Guatemala).—SCLATER, Proc. Zool. Soc. Lond., 1860, 64 (Pallatanga, Ecuador); 1860, 84 (do).—FRANTZIUS, Journ. für Orn., 1869, 293 (Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, Vera Cruz).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 237, pl. 13, figs. 2, 3; iii, 1874, 505 (Ogden, Utah, 1 spec., Sept., 1871).—BREWER, Proc. Bost. Soc. N. H., xix, 1878, 303 (breeding from Connecticut northward).—BREWSTER, Auk, iii, 1886, 174 (Jackson and Macon counties, North Carolina, breeding above 3,000 ft.).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 602.—RALPH, Trans. Oneida Hist. Soc., iii, 1886, 140 (Oneida Co., New York, breeding).—CORY, Auk, iii, 1886, 36; ix, 1892, 49 (Watlings I., Bahamas); Birds W. I., 1889, 50; Cat. W. I. Birds, 1892, 118 (New Providence and Watlings Islands, Bahamas).—RIDGWAY, Orn. Illinois, i, 1889, 148.—ALLEN, Bull. Am. Mus. N. H., ii, 1889, 69 (Quito, Ecuador); xiii, 1900, 178 (Las Nubes, etc., province Santa Marta, Colombia, Dec., Mar.); Auk, xii, 1895, 89 (Berkshire Co., Massachusetts, breeding).—COOKE, Bird Migr. Miss. Val., 1888, 252 (breeding from n. Minnesota northward).—SCOTT, Auk, vii, 1890, 20 (Tarpon Springs and Key West, Florida, rare migrant).—LOOMIS, Auk, vii, 1890, 127 (Pickens Co., South Carolina, breeding).—RALPH and BAGG, Auk, vii, 1890, 231 (Oneida Co., New York, breeding).—CHERRIE, Auk, vii, 1890, 336 (San Jose, Costa Rica, Sept. to Feb.); viii, 1891, 278 (San José, Costa Rica; remarks on plumage).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 619 (Manitoba, breeding).—STONE, Proc. Ac. Nat. Sci. Phila., 1891, 437 (Luzerne Co., Pennsylvania, breeding).—TODD, Auk, viii, 1891, 398 (Butler Co., Pennsylvania, breeding?); x, 1893, 41, 45 (Indiana and Clearfield counties, Pennsylvania, breeding).—WHITE, Auk, x, 1893, 228 (Mackinac I., Michigan, migrant).—NEHRLING, Our Native Birds, etc., i, 1893, 218, pl. 12, fig. 1.—RHODES, Proc. Ac. Nat. Sci. Phila., 1895, 496 (Roan Mt., 4,000 ft., and Chilhowee Mts., 2,000–4,000 ft., Tennessee, breeding).—CONGDON, Auk, xii, 1895, 190 (Dingmans Ferry, Pike Co., Pennsylvania, breeding).—BAILY, Auk, xiii, 1896, 296 (n. Elk Co., Pennsylvania, breeding).—FLEMING, Auk, xviii, 1901, 44 (Muskoka, etc., n. Ontario, common summer resid.).

*Dendroica blackburnia* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz); Cat. Am. Birds, 1862, 30 (Pallatanga and Nanegal, e. Ecuador; Bogota, Colombia).—CABANIS, Journ. für Orn., 1860, 328 (Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., vii, 1862, 468 (Panama R. R.); ix, 1868, 94 (San José, Atiro, and Barranca, Costa Rica).—BLAKISTON, Ibis, 1863, 62 (Severn House, Trout Lake, British Columbia).—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Santa Fé, Veragua); 1870, 183 (Calovevora, Chitra, Calobre, Cordillera del Chucu, and Volcan de Chiriqui, Veragua); Ibis, 1872, 314 (Chontales, Nicaragua).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 780 (Merida, Venezuela); 1879, 494 (Antioquia, Colombia).—WYATT, Ibis, 1871, 322 (Alto, Colombia).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 124, 166, 175 (Kansas; Ogden, Utah).—COUES, Check List, 1873, no. 80; 2d ed., 1882, no. 121; Birds N. W., 1874, 59; Birds Col. Val., 1878, 284.—TACZANOWSKI, Proc. Zool. Soc. Lond., 1874, 508 (centr. Peru); 1879, 223 (n. Peru); 1882, 6 (Huambo, n. Peru); Orn. du Pérou, i, 1884, 464.—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Tehuantepec).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (Naranjo, Costa Rica, Apr.).—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 58 (descr. young).—STEPHENS, Bull. Nutt. Orn. Club, iii, 1878, 93 (Fort

- Bayard, New Mexico, May, 1 spec.).—BROWN (N. C.), Bull. Nutt. Orn. Club, iv, 1879, 106 (Portland, Maine, breeding); vii, 1882, 36 (Boerne, Kendall Co., E. W. Texas, 1 spec., Mar. 31).—CORY, Birds Bahama I., 1880, 60.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 102.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 133.—BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1884, 286 (Cayandeled, W. Ecuador, Feb.).—MERRIAM, Auk, ii, 1885, 103 (Lewis Co., New York, breeding; descr. nest and eggs).—SHARPE, Cat. Birds, Brit. Mus., x, 1885, 288, 646 (Quito, Pasto, and Intaj, Ecuador; Medellin and Bogota, Colombia; Coban, Choctum, and Dueñas, Guatemala, etc.).—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 74 (Machay, Mapoto, and Baños, Ecuador, Jan.).
- Dendroeca blackburnie* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 611 (monogr.).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, no. 357, 1890, 8 (Pun, E. Ecuador, Feb.).
- Sylvia blackburni* VIEILLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 168.
- [*Dendroeca*] *blackburnie* COUES, Key N. Am. Birds, 1872, 100.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.—CORY, List Birds W. I., 1885, 8.
- Dendroeca blackburnie*? NEWTON, Man. Nat. Hist. Greenland, 1875, 98 (Frederickshaab, 1 spec., Oct., 1845).
- Dendroeca blackburnie* COUES, Check List, 2d ed., 1882, no. 121.
- [*Dendroeca*] *blackburnie* COUES, Key N. Am. Birds, 2d ed., 1884, 302.
- Sylvia parus* WILSON, Am. Orn., v, 1812, 114, pl. 44, fig. 3.—STEPHENS, Shaw's Gen. Zool., x, 1817, 727.—VIEILLOT, Enc. Méth., ii, 1823, 449.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 200; Ann. Lyc. N. Y., ii, 1826, 82.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 392.—AUDUBON, Orn. Biog., ii, 1834, 205, pl. 134.
- Sylvicola parus* JARDINE, ed. Wilson's Am. Orn., ii, 1832, 209.—BONAPARTE, Geog. and Comp. List, 1838, 22.—AUDUBON, Synopsis, 1839, 55; Birds Am., oct. ed., ii, 1841, 40, pl. 83.—WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 282 (Nova Scotia).
- Mniotilta parus* GRAY, Gen. Birds, i, 1848, 196.
- Mniotilta parus* REINHARDT, Ibis, 1861, 6 (Frederickshaab, Greenland, Oct. 16, 1845).
- [*Numenius*] *parus* BONAPARTE, Consp. Av., i, 1850, 311.



white superciliary stripe, usually becoming yellow anteriorly (over lores); a crescentic suborbital spot and patch on side of neck (invading median posterior portion of auricular region), white; throat and chest lemon or gamboge yellow, the chin usually more or less white; rest of under parts white, broadly streaked laterally with black, the broad black streaks on sides of chest confluent with a narrow stripe connecting them with the triangular black patch on side of head; bill black; iris brown; legs and feet dusky horn color (in dried skins); length (skins), 114.3–127.2 (121.9); wing, 64.5–68.6 (66.9); tail, 49–53.6 (50.7); exposed culmen, 12.7–15 (13.8); tarsus, 17–18 (17.4); middle toe, 12–13 (12.4).<sup>1</sup>

*Adult female*.—Similar to the adult male and often not distinguishable, but usually with less black on forehead, which is more often gray, streaked with black, medially, and yellow of throat and chest averaging slightly paler; length (skins) 113–125.7 (121); wing, 63.2–65.3 (64.6); tail, 46–53 (50); exposed culmen, 12.4–14 (12.9); tarsus, 16.3–17.5 (16.9); middle toe, 11.5–12.7 (12.2).<sup>2</sup>

*Young male in first autumn*.—Similar to the adult male, but gray of upper parts and white of under parts, especially the flanks, tinged with brown.

*Young female in first autumn*.—Similar to the young male in autumn, but more strongly tinged with brown, both above and below, and streaks on sides and flanks (especially the latter) less distinct, sometimes obsolete.

*Young, first plumage*.—Above, including entire pileum, plain light grayish brown or deep drab-gray; wings dusky, with light grayish brown edgings (broad and conspicuous on tertials, narrow and grayer on primaries), the middle and greater coverts broadly tipped with brownish white; a rather broad supra-auricular stripe, a narrow suborbital streak, and space on side of neck brownish white; loreal and auricular regions plain deep drab-gray, the latter with a whitish terminal or subterminal spot; chin and throat pale drab-gray; chest and

<sup>1</sup> Eighteen specimens.

<sup>2</sup> Eight specimens.

A series of twelve specimens collected during the breeding season at and near Cape Charles, Virginia, have on the average longer bills than a series of fourteen taken at various localities east of the Alleghenies (some of them on the coast), the average measurements of the two series being as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
<b>MALES.</b>					
Ten adult males from near Cape Charles, Virginia.....	66.5	50.1	14.5	17.4	12.3
Eight adult males from various localities (east of Alleghenies)	67.4	51.6	13	17.4	12.4
<b>FEMALES.</b>					
Two adult females from near Cape Charles, Virginia.....	65	49.5	13.5	16.5	11.7
Six adult females from various localities .....	64.4	50.1	12.6	17.1	12.3

sides of breast deeper drab-gray, the latter obsoletely streaked with dull white; rest of under parts dull white.

Atlantic coast district of United States; north to lower Maryland and eastern shore of Virginia, casually to New York (Long Island), Connecticut (New Haven; Hartford), and Massachusetts (Charles River; Dedham); breeding southward to Florida; in winter to Bahamas (Maranagua, Watlings, Great Bahama, Great Inagua, Abaco, and Berry islands), Cuba (including Isle of Pines), Grand Cayman, Jamaica, Haiti, and Porto Rico.

[*Motacilla*] *dominica* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 334 (based on *Le Figuer cendré* de *S. Domingue*, *Ficedula dominicensis cinerea*, Brisson, Orn., iii, 1760, 520, pl. 27, fig. 3).—GMELIN, Syst. Nat., i, 1788, 980.

[*Sylvia*] *dominica* LATHAM, Index Orn., ii, 1790, 538.

*Sylvia dominica* VIEILLLOT, Nouv. Dict. d'Hist. Nat., xi, 1817, 223.—STEPHENS, Shaw's Gen. Zool., x, 1817, 612.

[*Mniotilta*] *dominica* GRAY, Gen. Birds, i, 1848, 197.

[*Mniotilta*] *dominica* GRAY, Hand-list, i, 1869, 240, no. 3478.

*Dendroica dominica* BAIRD, Review Am. Birds, Apr., 1865, 209, part.—GUNDLACH, Repert. Fisico-Nat. Cuba, i, 1865, 235; Journ. für Orn., 1872, 415 (Cuba); Anal. Soc. Esp. Hist. Nat., vii, 1878, 184 (Porto Rico).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 240, part, pl. 14, fig. 6; iii, 1874, 505 (Wilmington, North Carolina, breeding; descr. nest and eggs).—BREWER, Proc. Bost. Soc. N. H., xix, 1878, 303 (near New Haven and Hartford, Connecticut, accidental); xx, 1879, 265 (Charles R., Massachusetts, accidental).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 663.—ALLEN, Bull. Am. Mus. N. H., i, 1886, 257 (Dedham, Massachusetts, 1 spec.).—COVEY, Ank, iii, 1886, 36 (West Indian references), 501 (Grand Cayman); ix, 1892, 48 (Bahamas), 49 (Watlings I., Bahamas); Birds W. I., 1899, 50; Cat. W. I. Birds, 1892, 118, 155 (Great Bahama, Abaco, Biminis, Berry Islands, New Providence, Watlings I., Maraguna, and Great Inagua, Bahamas; Cuba, Isle of Pines, Grand Cayman, Jamaica, Haiti, and Porto Rico).—RICHMOND,

- [*Dendræca*] *dominica* COUES, Key N. Am. Birds, 1872, 104.—CORY, List Birds W. I., 1885, 8.
- D[endræca] dominica* NEWTON (A. and E.), Handb. Jamaica, 1881, 106.—COUES, Key N. Am. Birds, 2d ed., 1884, 306.
- [*Dendroica dominica*] var. *dominica* RIDGWAY, Am. Nat., vii, Oct., 1873, 606.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 220, 241.
- [*Dendræca dominica* . . .] a. *dominica* COUES, Birds Col. Val., 1878, 247, excl. syn. part.
- [*Dendræca dominica*.]  $\beta$ . *D. dominica* SHARPE, Cat. Birds Brit. Mus., x, 1885, 304, 648, in list of specimens.
- Dendroeca dominica* SUNDEVALL, Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 596 (Porto Rico), 611 (monogr.).
- Motacilla superciliosa* BODDAERT, Tabl. Pl. Enl., 1783, 43 (based on *la Gorge-jaune de St. Domingue* Daubenton, Pl. Enl., pl. 686, fig. 1).
- M[niottilla] superciliosa* GRAY, Gen. Birds, i, 1848, 196.
- Dendroica superciliosa* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 289, part; Cat. N. Am. Birds, 1859, no. 209, part.—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba).—MARCH, Proc. Ac. Nat. Sci. Phila., xv, 1863, 293 (Jamaica).
- Dendræca superciliosa* SCLATER, Proc. Zool. Soc. Lond., 1861 (Jamaica); Cat. Am. Birds, 1862, 33, part (Jamaica).
- [*Dendræca*] *superciliosa* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9, part (Antilles).
- [*Motacilla*] *pensilis* GMELIN, Syst. Nat., i, 1788, 960 (based on *la Gorge-jaune de St. Domingue* Daubenton, Pl. Enl., pl. 686, fig. 1; *Pensile Warbler* Latham, Gen. Synop., ii, pt. 2, 1783, 441).
- Motacilla pensilis* LESSON, Traité d'Orn., 1831, 418.
- [*Sylvia*] *pensilis* LATHAM, Index Orn., ii, 1790, 520.
- Sylvia pensilis* VIEILLOT, Ois. Am. Sept., ii, 1807, 11, pl. 72; Nouv. Dict. d'Hist. Nat., xi, 1817, 177; Enc. Méth., ii, 1823, 427.—STEPHENS, Shaw's Gen. Zool., x, 1817, 629.—BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 79.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 374.—AUDUBON, Orn. Biog., i, 1831, 434, part, pl. 85.—D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois, 1839, 65.
- Sylvicola pensilis* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List. 1838, 22.—AUDUBON, Synopsis, 1839, 53, part; Birds Am., oct. ed., ii, 1841, 32, part, pl. 79.—GOSSE, Birds Jamaica, 1847, 156; Illustr. Birds Jam., 1849, pl. 32.—LAWRENCE, Ann. Lyc. N. Y., vi, 1853, 8 (Long Island, New York).—SALLÉ, Proc. Zool. Soc. Lond., 1857, 231 (Santo Domingo).—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).—ALBRECHT, Journ. für Orn., 1862, 201 (Jamaica).—BRYANT, Proc. Bost. Soc. N. H., xi, 1866, 91 (Santo Domingo).
- [*Sylvicola*] *pensilis* BONAPARTE, Consp. Av., i, 1850, 307.
- R[himanphus] pensilis* CABANIS, Mus. Hein., i, 1850, 19.
- Rhimamphus pensilis* GUNDLACH, Journ. für Orn., 1855, 474 (Cuba); 1861, 408 (do).
- [*Motacilla*] *flavicollis* GMELIN, Syst. Nat., i, 1788, 959 (based on *Yellow-throated Creeper*, *Parus americanus gutture luteo*, Catesby, Nat. Hist. Carolina, 62, pl. 62; *Yellow-throated Warbler* Latham, Gen. Synop., ii, pt. 2, 437, etc.).
- [*Sylvia*] *flavicollis* LATHAM, Index Orn., ii, 1790, 518.
- Sylvia flavicollis* VIEILLOT, Ois. Am. Sept., ii, 1807, 45; Nouv. Dict. d'Hist. Nat., xi, 1817, 191; Enc. Méth., ii, 1823, 453.—WILSON, Am. Orn., ii, 1810, 64, pl. 12, fig. 6.—STEPHENS, Shaw's Gen. Zool., x, 1817, 679.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 188.
- Sylvicola flavicollis* JARDINE, ed. Wilson's Am. Orn., i, 1832, 213.
- (?) *Dendroica dominica albilora* (not of Ridgway?) SCOTT, Auk, x, 1893, 340, 341 (Jamaica).

## DENDROICA DOMINICA ALBILORA Ridgway.

## SYCAMORE WARBLER.

Similar to *D. d. dominica*, but with much smaller bill, the supercilary stripe more rarely yellow anteriorly, and with white areas on inner webs of lateral rectrices averaging decidedly larger.

*Adult male*.—Length (skins), 114.3–123.2 (116.8); wing, 63.5–69.6 (66.5); tail, 48.8–52.6 (50.8); exposed culmen, 11.4–12.7 (11.9); tarsus, 16–17.2 (16.8); middle toe, 11.4–12.4 (11.9).<sup>1</sup>

*Adult female*.—Length (skins), 106.7–120.6 (115.1); wing, 63–65.5 (63.7); tail, 46.5–49.5 (48); exposed culmen, 10.9–12.2 (11.7); tarsus, 16.3–17 (16.7); middle toe, 11.7–12.2 (11.9).<sup>2</sup>

Mississippi Valley; north, regularly, to eastern Kansas (Neosho Falls), central Illinois, Indiana (north to Carroll County), Ohio (Columbus), and West Virginia (Kanawha County), irregularly to southern Wisconsin, southern Michigan (Detroit), and northern Ohio (Cleveland; Rockport); breeding southward to Louisiana and eastern Texas. In winter southward through Mexico (both coasts) to Yucatan (including Cozumel, Mugerres, and Holbox islands), British Honduras (Belize), Honduras (Truxillo; Ruatan Island), and eastern Nicaragua (Greytown). Occasional during migration in South Carolina (also in Georgia and Florida?).

*Sylvia flavicollis* (not *Motacilla flavicollis* Gmelin) SWAINSON, Philos. Mag., n. s., i, 1827, 434 (Vera Cruz, Mexico).

*Sylvicola flavicollis* Hox, Proc. Ac. Nat. Sci. Phila., vi, 1853, 310 (Wisconsin).

*Sylvicola pensilis* (not *Motacilla pensilis* Gmelin) READ, Proc. Ac. Nat. Sci. Phila., vi, 1853, 398 (Ohio).

*Sylvia pensilis* rect. et Latham. AUDUBON, Orn. Biog., i, 1831, 434, part. Hav-

*Dendroica dominica* (not *Motucilla dominica* Linnæus) BAIRD, Review Am. Birds, 1865, 209, part (Cleveland, Ohio; Cairo, Illinois; Tamaulipas and near Colima, Mexico; Dueñas, Guatemala).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, Vera Cruz, after Aug. 10).—JORDAN, Am. Nat., ix, 1875, 313 (Indiana).—(?) CHERRIE, Auk, ix, 1892, 21 (San Jose, Costa Rica, Oct. 4, 1891<sup>1</sup>).

*Dendroica dominica* LAWRENCE, Ann. Lyc. N. Y., ix, 1869, 200 (Merida, Yucatan); Mem. Bost. Soc. N. H., ii, 1874, 270 (Tepic, Colima, and Rio de la Coahuayana, w. Mexico).—SCOTT, Proc. Bost. Soc. N. H., xv, 1872, 222 (Kanawha Co., West Virginia).—COUES, Birds N. W., 1874, 66, part, 233 (Columbus, Ohio, common).—LANGDON, Birds Cinc., 1877, 6 (near Cincinnati, Ohio, common Apr. 15 to 30).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 134, part (Totonicapam and Choctum, Guatemala; Valladolid, Yucatan; Belize, British Honduras, etc.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 301, part.—SALVIN, Ibis, 1888, 250 (Holbox, Mujeres, and Cozumel islands, coast of Yucatan; Ruatan Island, Honduras; crit.).

[*Dendroica*] *dominica* COUES, Key N. Am. Birds, 1872, 103, part.

*Dendroica dominica*, var. *albilora* BAIRD, RIDGWAY, Am. Nat., vii, Oct., 1873, 605 (Belize, British Honduras; coll. U. S. Nat. Mus.); Ann. Lyc. N. Y., x, 1874, 368 (Illinois).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, pl. 14, fig. 7; iii, 1874, 505.

*Dendroica dominica* . . . var. *albilora* COUES, Check List, 1873, 125, no. 88a.

*Dendroica dominica* var. *albilora* LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 16 (Gineta Mts., Chiapas, Jan.).—LANGDON, Birds Cinc., 1877, 6 (near Cincinnati, Ohio).

[*Dendroica dominica*] var. *albilora* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 220, 241, in text.

*D[endræca] dominica* var. *albilora* NELSON, Bull. Essex Inst., viii, 1876, 99 (n. e. Illinois; Indianapolis, Indiana; Detroit, Michigan); ix, 1877, 35 (Mount Carmel, Illinois, very abundant Aug. 30 to Sept. 2).

*Dendroica dominica albilora* RIDGWAY, Bull. Nutt. Orn. Club, iii, Oct., 1878, 163 (Mount Carmel, Illinois); Proc. U. S. Nat. Mus., iii, 1880, 172, 216; Nom. N. Am. Birds, 1881, 103a.—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 13 (Brownsville, Texas, Mar. 26).—BROWN, Bull. Nutt. Orn. Club, vii, 1882, 36 (Boerne, s. w. Texas).—COUES, Check List, 2d ed., 1882, no. 130.—NEHRLING, Bull. Nutt. Orn. Club, vii, 1882, 9 (s. e. Texas, breeding).

*D[endræca] d[ominica] albilora* COUES, Key N. Am. Birds, 2d ed., 1884, 306.

[*Dendroica dominica*] b. *albilora* COUES, Birds Col. Val., 1878, 248.

*Dendroica dominica albilora* RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 564 (Cozumel I., Yucatan; crit.); x, 1888, 579 (Truxillo, Honduras); Bull. Nutt. Orn. Club, vii, 1882, 19 (Knox Co., Indiana); Orn. Illinois, i, 1889, 150.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 663a.—LOOMIS, Auk, iii, 1886, 139 (Chester Co., South Carolina, 1 spec., May 7); vii, 1890, 127 (Pickens Co., South Carolina, breeding); viii, 1891, 171 (Chester Co., South Carolina, com. migr.).—BUTLER, Bull. Brookville Soc. N. H., no. 2, 1886, 35 (Franklin Co., Indiana, common summer resid.).—COOKE, Bird Migr. Miss. Val., 1888, 252 (Mississippi Valley localities and dates).—EVERMANN, Auk, vi, 1889, 27 (Carroll Co., Indiana, breeding).—SCOTT, Auk, vii, 1890, 20 (Key West, Florida, 1 spec., Mar. 27), 313 (Garden Key, Tortugas, 6 spec.); (?) x, 1893, 340, 341 (Jamaica<sup>2</sup>).—GOSS, Birds Kansas, 1891, 564 (e. Kansas, summer resid.).—SMITH (R. W.), Journ. Cinc. Soc. N. H., 1891, 123 (Warren Co., Ohio, common in Apr.).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484 (Greytown, Nicaragua, Feb. 12).—JOUY, Proc. U. S. Nat. Mus.,

<sup>1</sup> Specimen merely seen, and may have been *D. graciae decora*.

<sup>2</sup> Doubtful.

- xvi, 1894, 777 (Cuernavaca, Morelos, Sept. 4).—CLREY and WALLACE, Proc. Ind. Ac. Soc., 1895, 157 (Wabash, Indiana, migratory).—BEYER, Proc. Louisiana Soc. Nat. for 1897-99 (1900), 113 (Louisiana, breeding).  
*D[endroica] dominica albilora* RIDGWAY, Man. N. Am. Birds, 1887, 504.—WOOD (J. C.), Auk, xvii, 1900, 391 (Detroit, Michigan, breeding).  
 [*Dendroica dominica*] *α. D. albilora* SHARP, Cat. Birds Brit. Mus., x, 1885, 304, 648 (Mazatlan; Progreso, n. Yucatan; Belize, British Honduras, etc.).

## DENDRIOCA GRACIÆ GRACIÆ Baird.

## GRACE'S WARBLER.

Resembling *D. dominica*, but much smaller, with superciliary stripe mostly yellow, sides of neck gray instead of white, no black patch on side of head, and back streaked with black.

*Adult male in spring and summer*.—Above slate-gray, the crown and back streaked with black (sides of crown sometimes uniformly black); wings and tail dusky with slate-gray edgings, the middle wing-coverts broadly, the greater coverts more narrowly, tipped with white, forming two distinct wing-bands; two outermost rectrices with inner webs extensively white terminally (the white occupying more than terminal half on outermost rectrix, which also has the outer web largely white), the third rectrix also usually with a white terminal or subterminal elongated patch; a superciliary stripe of yellow, passing into white beyond eye; a broad dusky loreal streak and a narrow dusky rictal streak; auricular region and sides of neck plain slate-gray; sub-orbital spot, malar region, chin, throat, and chest lemon yellow; remaining under parts white, with sides of chest and breast, sides, and flanks streaked with black; bill black, the mandible more brownish basally; iris brown; legs and feet dusky brown (in dried skins).

row and concealed, or obsolete; white of under parts strongly buffy, the sides and flanks strongly tinged with buffy brown; white wing-bands tinged with brownish buff.

*Young female in first autumn and winter.*—Similar to the supposed adult female of corresponding season, but still duller colored; darker streaks on forehead and crown very indistinct, those on back obsolete; yellow of throat, etc., duller, and streaks on sides and flanks obsolete.

*Young male, first plumage.*—Above plain grayish hair brown or drab-gray, the feathers ash gray beneath the surface; sides of head similar but rather paler; malar region, chin, and throat pale brownish gray, minutely and sparsely flecked with darker, the chest similar, but with rather large roundish spots of dusky; rest of under parts dull white streaked or spotted with dusky gray medially, dull grayish laterally.

*Adult male.*—Length (skins), 110–117 (113.2); wing, 64–66 (65.1); tail, 47–50 (48.4); exposed culmen, 9–10 (9.5); tarsus, 17–18 (17.2); middle toe, 10–12 (10.5).<sup>1</sup>

*Adult female.*—Length (skins), 113–115 (114); wing, 60–62 (61); tail, 46–47 (46.7); exposed culmen, 10; tarsus, 17; middle toe, 9–12 (10.7).<sup>2</sup>

Southwestern United States and adjacent parts of northwestern Mexico; northward through mountains of New Mexico and Arizona to southern Colorado (San Juan County); breeding southward to Chihuahua (Colonia Garcia) and Sonora (30 miles south of Nogales); during migration south to Tepic (Santa Teresa, August 11) and Jalisco (Bolaños, September 17); casual in southern California (Santa Paula, Ventura County, one specimen, May 3).

*Dendroica gracix* BAIRD, Review Am. Birds, Apr., 1865, 210 (Fort Whipple, Arizona; coll. U. S. Nat. Mus.; ex "Coues MSS.").—COOPER, Orn. Cal., 1870, 563 (Fort Whipple).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 243, pl. 14, fig. 10.—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 197 (Inscription Rock, New Mexico; White Mts. and Camp Apache, Arizona).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 664.—EVERMANN, Auk, iii, 1886, 185 (Santa Paula, Ventura Co., California, 1 spec., May 3, 1881).—SCOTT, Auk, v, 1888, 34 (Santa Catalina Mts., Arizona, breeding).—MEARNS, Auk, vii, 1890, 261 (Clarks Valley, Arizona, in pine belt).—LADD, Auk, viii, 1891, 315 (Yavapai Co., Arizona; descr. nest and eggs).—JOY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (32 miles s. of Nogales, Sonora, June 17).—NEHRLING, Our Native Birds, etc., i, 1893, 224.—MITCHELL, Auk, xv, 1898, 310 (San Miguel Co., New Mexico, breeding at 8,500 ft.).

*D[endroica] gracix* RIDGWAY, Man. N. Am Birds, 1887, 506.

[*Dendroica gracix*] var. *gracix* RIDGWAY, Am. Nat., vii, 1873, 608.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 220, 244.

*Dendræca gracix* COUES, Proc. Ac. Nat. Sci. Phila., xviii, 1866, 67 (Fort Whipple); Check List, 1873, no. 87; 2d ed., 1882, no. 128; Birds Col. Val., 1878, 292 (excl. syn. under "*b. decora*").—(i) LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 16 (Zapotitlan, Oaxaca, Jan.).—BREWSTER, Bull. Nutt. Orn. Club, v, 1880, 72 (Chiricahua Mts., Arizona).—DREW, Bull. Nutt. Orn. Club, vi,

<sup>1</sup> Seven specimens.

<sup>2</sup> Four specimens.

- Dendroica adelaida* BAIRD. Review Am. Birds, Apr., 1865, 212 (Porto Rico; coll. U. S. Nat. Mus.).—CORY, Auk, iii, 1886, 37; Birds W. I., 1889, 51; Cat. W. I. Birds, 1892, 18, 118, 132.
- Dendroica adelaida* SUNDEVALL. Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 596 (Porto Rico), 615 (monogr.).
- [*Dendroica*] *adelaida* SLATER and SALVIN. Nom. Av. Neotr., 1873, 9, part.—CORY, Key N. Am. Birds, 2d ed., 1884, 297, in text.
- Dendroica adelaida* GUNDELACH. Anal. Soc. Esp. Hist. Nat., vii, 1878, 185 (Porto Rico).—CORY, Birds Col. Val., 1878, 293, footnote.—CORY, Birds W. I., 1886, 5.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 306.
- [*Dendroica*] *adelaida* RIDGWAY, Proc. U. S. Nat. Mus., v, 1883, 526 (diagnosis) [*Dendroica grisea*] var. *adelaida* RIDGWAY, Am. Nat., vii, Oct., 1873, 608; in Hist. N. Am. Birds, i, 1874, 220.
- Sylvia adelaida* BRYANT, Proc. Bos. Soc. N. H., x, 1866, 250 (Porto Rico).

#### DENDROICA DELICATA Ridgway.

##### SANTA LUCIA WARBLER.

*Adult male*.—Similar to *D. adelaida*, but wing and tail much longer; yellow superciliary stripe much broader, occupying whole forehead except a median line of black; sides of crown more broadly black; gray of upper parts deeper, more plumbeous; yellow of superciliary stripe and under parts much deeper (rich lemon, scarcely if at all paler on abdomen); white on inner webs of lateral rectrices relatively less extended, that on lateral rectrix occupying less than terminal half; length (skins), 105-120 (114.2); wing, 54-57 (56); tail, 49-54 (51); exposed culmen, 10-11 (10.1); tarsus, 17-20 (18.2); middle toe, 10.<sup>1</sup>

*Adult female*.—Similar to the adult male, but coloration not quite so deep, especially the yellow, which is exactly as in the adult male of *D. adelaida*, though much brighter on the abdomen than in that species; black on sides of crown much narrower; white wing-bands narrower.



## DENDROICA PENNSYLVANICA (Linnæus).

## CHESTNUT-SIDED WARBLER.

*Adult male.*<sup>1</sup>—Forehead and crown olive-yellow, the former becoming whitish anteriorly, both sometimes flecked with dusky; lores, sub-orbital region, malar region, postocular stripe, occiput, and hindneck black, the last two streaked with white, grayish, or yellowish, the occiput usually with a central spot of white or yellowish; auricular region, sides of neck, chin, throat, and under parts white, relieved by a broad lateral stripe of rich chestnut, extending from posterior extremity of black malar stripe along the sides, usually to the flanks, but sometimes not beyond sides of breast; back and scapulars broadly streaked with black on a white, grayish, and olive-yellow ground, the last-mentioned color usually prevailing; rump usually yellowish olive-green, sometimes grayish, with or without black streaks; upper tail-coverts black, broadly margined with light gray (sometimes tinged with yellowish olive-green); tail black with narrow olive-grayish edgings, the three outermost rectrices with inner webs extensively white terminally, that on the exterior rectrix occupying the terminal half, or more; wings black with yellowish olive-green edgings (becoming grayish on primaries and primary coverts), the middle and greater coverts broadly tipped, the latter also edged, with sulphur yellow; lesser coverts margined with gray or olive-gray; bill blackish, the mandible inclining to dusky horn color, especially basally; iris brown; legs and feet dusky brown; length (skins), 111.8–121.9 (115.7); wing, 61.2–67.1 (63.3); tail, 48.5–52.6 (50.1); exposed culmen, 9.4–9.9 (9.6); tarsus, 17–18.3 (17.8); middle toe, 10.2–10.9 (10.6).<sup>2</sup>

*Adult female.*—Similar to adult male, but duller in color, the forehead and crown light olive-green rather than olive-yellow, the black areas on sides of head less deep black, often much broken by grayish streaking or mottling, sometimes replaced by grayish and much more restricted; chestnut of sides averaging less extensive; greater wing-coverts without yellow edgings;<sup>3</sup> length (skins), 106.7–116.8 (111.8); wing, 57.9–61.5 (59.3); tail, 45–48.5 (46.7); exposed culmen, 9.1–9.9 (9.5); tarsus, 17–18 (17.6); middle toe, 9.6–10.4 (10.3).<sup>2</sup>

*Young in first autumn and winter.*—Above plain bright olive-green, the back and rump with concealed, or mostly concealed, black or

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<sup>1</sup> Judging from the scant material from Central America, the plumage appears to be the same in winter as in spring and summer; specimens examined are without dates, however.

<sup>2</sup> Seven specimens.

<sup>3</sup> The adult female varies so much, individually, in coloration that a satisfactory diagnosis is difficult. The brighter colored females are scarcely, if at all, distinguishable from duller colored males; the average, however, are decidedly duller, while some have the crown olive-green, the black head markings obsolete, and the chestnut of sides limited to a few isolated touches.

dusky streaks; sides of head and neck plain cinereous or plumbeous, relieved by a white orbital ring; under parts white medially passing into light olive-gray laterally, the flanks sometimes touched with chestnut; wings, tail, and upper tail-coverts as in adults.

*Young in first plumage.*—Above plain light olive, the wings and tail essentially as in adults; an indistinct whitish orbital ring; sides of head and neck, chin, throat, chest, and sides of breast plain pale buffy grayish or drab; rest of under parts white, the sides and flanks tinged with pale grayish brown.

Eastern United States and more southern British Provinces; north to Nova Scotia, northern Ontario, and Manitoba; west to edge of the Great Plains, casually to eastern Wyoming (Cheyenne); breeding southward to Connecticut, northern New Jersey, Pennsylvania (Butler, Armstrong, Indiana, Clearfield, Elk, and Luzerne counties), northern Ohio, central Illinois, Missouri (St. Louis County), and eastern Nebraska (near Omaha), and along Allegheny Mountains to western North Carolina (2,000 to 4,000 feet), northwestern South Carolina (Pickens County, etc.), and eastern Tennessee (Roan Mountain, 3,500 to 4,000 feet). In winter south through eastern Mexico and Central America to Isthmus of Panama (Lion Hill Station, Panama Railroad) and to Bahamas (island of New Providence). Accidental in Greenland.

[*Motacilla*] *penaylranica* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 333 (based on *The Red-throated Flycatcher*, *Muscicapa guthrie rubro*, Edwards, Gleanings Nat. Hist., ii, 193, pl. 301).

[*Syltria*] *penaylranica* LATHAM, Index Orn., ii, 1790, 540.

*Dendroica penaylranica* PARKER, Am. Nat., v, 1871, 168.—STARK, Am. Nat., viii, 1874, 756 (West Virginia, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 659.—RALPH, Trans. Oneida Hist. Soc., iii, 1886, 139 (Oneida Co., New York, breeding).—BREWSTER, Auk, iii, 1886, 174 (mountainous region of New York, breeding).

breeding).—BAILY, Auk, xiii, 1896, 296 (n. Elk Co., Pennsylvania, breeding).—COLVIN, Auk, xv, 1898, 59 (near Osawatomie, e. Kansas, Oct. 12).—RIVES, Auk, xv, 1898, 136 (West Virginia, breeding in spruce belt).—FLEMING, Auk, xviii, 1901, 43 (Muskoka, etc., n. Ontario, abundant summer resid.).

*D[endroica] pensylvanica* RIDGWAY, Man. N. Am. Birds, 2d ed., 1896, 500.

*Dendroica pensylvanica* RIDGWAY, Am. Nat., vii, 1873, 199 (Fox Prairie, Richland Co., Illinois, June).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (San Carlos, Costa Rica, Feb.).

[*Motacilla*] *pensilvanica* GMELIN, Syst. Nat., i, pt. ii, 1788, 971.

*Sylvia pensylvanica* WILSON, Am. Orn., ii, 1810, 99, pl. 14, fig. 5.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 189.

*M[nioutilta] pensylvanica* GRAY, Gen. Birds, i, 1848, 196.

[*Mnioutilta*] *pensylvanica* GRAY, Hand-list, i, 1869, 241, no. 3485.

*Dendroica pensylvanica* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 279; Cat. N. Am. Birds, 1859, no. 200; Review Am. Birds, 1865, 191 (Teleman, Vera Paz, Guatemala).—HAYDEN, Rep. Trans. Am. Philos. Soc., xii, 1862, 161 (Platte R., Nebraska).—FRANTZIUS, Journ. für Orn., 1869, 293 (Costa Rica).—TRIPPE, Proc. Bost. Soc. N. H., xv, 1872, 235 (Mahaska Co., s. Iowa, breeding).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 245, pl. 13, figs. 7, 8.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (New England, summer resid.).—PLATT, Trans. Meriden Sci. Assoc., ii, 1885–86, 49 (Meriden, Connecticut, rare summer resid.).—CORY, Auk, iii, 1886, 35 (Bahamas, winter); Birds W. I., 1889, 49 (W. I. references).—RIDGWAY, Orn. Illinois, i, 1889, 145.—CHERRIE, Auk, viii, 1891, 278 (San José, Costa Rica; remarks on plumage).—STONE, Proc. Ac. Nat. Sci. Phila., 1891, 437 (Luzerne Co., Pennsylvania, breeding).—BRUNER, Proc. Nebraska Orn. Union, 2d. an. meet., 1901, 57 (breeding near Omaha, Nebraska).

*D[endroica] pensylvanica* RIDGWAY, Man. N. Am. Birds, 1887, 500.

*Dendroica pensylvanica* SALVIN and SCLATER, Ibis, 1860, 273 (Coban, Guatemala).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Lion Hill, Panama, R. R.); 1870, 836 (coast Honduras).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Lion Hill, Panama, R. R.); ix, 1868, 94 (Grecia and Baranca, Costa Rica); ix, 1869, 200 (Merida, Yucatan).—SCLATER, Cat. Am. Birds, 1862, 31.—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Santa Fe, Veragua); 1870, 182 (Chitra and Calovevora, Veragua; Volcan de Chiriqui).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269 (e. Florida, Mar.); iii, 1872, 124 (Kansas).—COUES, Check List, 1873, no. 83; 2d ed., 1882, no. 124; Birds N. W., 1874, 62; Birds Col. Val., 1878, 244.—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 59 (descr. young).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (Costa Rica).—RATHBUN, Rev. List Birds Centr. New York, 1879, 12 (common summer resid.).—CORY, Birds Bahama I., 1880, 62.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 131.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 99.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 285, 645 (Panama; Veragua; Jalapa; Coban, Choctum, and Dueñas, Guatemala; Angostura and Irazú district, Costa Rica, etc.).

[*Dendroica*] *pensylvanica* COUES, Key N. Am. Birds, 1872, 102.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.—CORY, List Birds W. I., 1885, 8.

*D[endroica] pensylvanica* NELSON, Bull. Essex Inst., viii, 1876, 99, 152 (n. e. Illinois, breeding).—COUES, Key N. Am. Birds, 2d ed., 1884, 304.

[*Motacilla*] *icterocephala* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 334 (based on *Figuier à teste jaune de Canada*, *Ficedula canadensis icterocephalos*, Brisson, Orn., iii, 517, pl. 27, fig. 2).—GMELIN, Syst. Nat., i, 1788, 980.

[*Sylvia*] *icterocephala* LATHAM, Index Orn., ii, 1790, 538.

- Sylvia icterocephala* Vieillot, Ois. Am. Sept., ii, 1807, 31, pl. 90; Nouv. Dict. d'Hist. Nat., xi, 1817, 223; Enc. Méth., ii, 1823, 441.—STEPHENS, Shaw's Gen. Zool., x, 1817, 622.—BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 80.—AUDUBON, Orn. Biog., i, 1832, 306, pl. 59.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 380.
- Sylvicola icterocephala* JARDINE, ed. Wilson's Am. Orn., i, 1832, 248.—RICHARDS, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List 1838 22.—AUDUBON, Synopsis, 1839, 54; Birds Am., oct. ed., ii, 1841, 35, pl. 81.—BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia); vii, 1859 110 (Bahamas).—ALBRECHT, Journ. für Orn., 1861, 153 (Bahamas).
- [*Sylvicola*] *icterocephala* BONAPARTE, Consp. Av., i, 1850, 308.
- Dendroica icterocephala* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa).—CARANIS, Journ. für Orn., 1860, 328 (Costa Rica).
- Dendroica icterocephala* SUNDEVALL, Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 612 (monogr.).
- Dendroica icterocephala* SCLATER, Proc. Zool. Soc. Lond., 1859, 374 (Oaxaca, Apr.).
- [*Mniotilta*] *icterocephala* GIEBEL, Thesaurus Orn., ii, 1875, 603.

## DENDROICA CASTANEA (Wilson).

## BAY-BREASTED WARBLER.

*Adult male (summer and winter).*—Forehead, sides of crown and occiput, auricular region, suborbital region, lores, and malar region black, the auricular region usually more or less streaked with whitish or pale buffy; crown and occiput (except laterally) rich chestnut; sides of neck plain buff; back and scapulars gray, usually more or less tinged (sometimes strongly) with buffy olive, and broadly streaked with black; rump similar, but with streaks obsolete or concealed; upper tail-coverts gray, with more or less distinct mesial streaks of blackish; tail grayish black or dusky with light-gray edgings, the inner webs of two or three outermost rectrices with a terminal patch of



occiput usually more or less intermixed with chestnut, sometimes with a considerable patch of that color; chestnut of under parts sometimes wholly absent, but usually the area so colored in the male more or less distinctly indicated, especially across chest and along sides; forehead and sides of head never (?) black;<sup>1</sup> length (skins), 113-123.2 (118.9); wing, 67.8-73.9 (69.6); tail, 48-52.8 (50); exposed culmen, 9.4-9.9 (9.6); tarsus, 17.8-19.3 (18.3); middle toe, 10.4-11.7 (10.9).<sup>2</sup>

*Young in first autumn and winter.* Pileum, hindneck, back, and scapulars dull yellowish olive green, usually indistinctly (rarely distinctly) streaked with black, often without streaks; rump and upper tail-coverts more grayish than back, with or without streaks; wings and tail as in adults, but white wing-bands usually tinged, more or less, with olive-yellowish; sides of head and neck mostly yellowish olive or dull olive-yellow, relieved by a dusky grayish loreal and post-ocular streak, the eyelids white or pale yellowish; under parts pale buff or buffy whitish, more decidedly whitish on throat and abdomen, more strongly buff on flanks and under tail-coverts, the former usually tinged (sometimes strongly) with chestnut.

*Young female, first plumage.* "Remiges, rectrices, primary coverts, and alulae as in adult. Pileum, nape, and rump dull brown; back dull olive-green; upper tail-coverts slaty-black. Entire under parts creamy-white, with the slightest possible tinge of clay-color, varying to ashy on the breast. No trace of chestnut on the flanks. Sides of head buff, strongly tinged with greenish on the auriculars and maxillary line. Each feather of the body, both above and beneath, with a large terminal spot of black; the posterior half of abdomen, anal region, and crissum are, however, immaculate. In my collection, from Upton, Me., August 9, 1878."<sup>3</sup>

Eastern United States and British Provinces; north to Hudson Bay (Moose Factory, Hamilton Inlet, etc.) and Manitoba (Portage la

<sup>1</sup> Usually the adult female has the back more narrowly streaked than the adult male; sometimes the streaks, both on back and pileum, are nearly obsolete.

<sup>2</sup> Eight specimens

<sup>3</sup> Brewster, Bull. Nuttall Orn. Club, iii, 1878, 58-59. Mr. Brewster adds that "a very complete suite of specimens, taken late in August and early in September, illustrates well the development of the plumage of the young of this species. The spotted feathers of the under parts, with the exception of a narrow line down the center of the breast, are the first to disappear, and simultaneously with their removal, the chestnut flank-patches become apparent. Next the pileum and nape take on the autumnal green, and last of all the feathers of the back and central line beneath are changed. Adults of this species in fall dress are indistinguishable from the young, except by the more pronounced chestnut on the sides." While admitting the possibility that adults assume a different plumage in winter, I would say that adult males in the National Museum collection from Guatemala and Colombia (Bogotá), presumably taken in winter, are in coloration exactly like spring and summer specimens from the United States.

Prairie); west to edge the Great Plains; breeding southward to northern Maine, New Hampshire, Vermont, New York, and northern Michigan (Mackinac Island). In winter southward through eastern Mexico and Central America<sup>1</sup> to Colombia (numerous localities and records). No West Indian record.

*Sylvia castanea* WILSON, Am. Orn., ii, 1810, 97, pl. 14, fig. 4 (e. Pennsylvania; coll. Peale Museum). STEPHENS, Shaw's Gen. Zool., x, 1817, 714.—VIEILLLOT, Enc. Méth., ii, 1823, 452.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 189; Ann. Lyc. N. Y., ii, 1826, 80.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 382.—AUDUBON, Orn. Biog., i, 1831, 358, pl. 69.

*Sylvicola castanea* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List, 1838, 22.—AUDUBON, Synopsis, 1839, 53; Birds Am., oct. ed., ii, 1841, 34, pl. 80.—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin); Ann. Rep. Smithsonian Inst. for 1864 (1865), 438 (Missouri).

[*Sylvicola*] *castanea* BONAPARTE, Consp. Av., i, 1850, 308.

[*Mniotilta*] *castanea* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *castanea* GRAY, Hand-list, i, 1869, 241, no. 3483.

[*Rhinanphus*] *castaneus* CARANIS, Mus. Hein., i, 1850, 19 (Mexico).

*Dendroica castanea* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 276; Cat. N. Am. Birds, 1859, no. 197; Review Am. Birds, 1865, 189 (Turbo, Rio Truando, and Panama, Colombia).—SCLATER and SALVIN, Ibis, 1859, 11 (Guatemala).—CASSIN, Proc. Ac. Nat. Sci. Phila., xii, 1860, 103 (Rio Truando and Turbo, Colombia).—BREWER, Proc. Bost. Soc. N. H., xv, 1872, 192 (remarkable abundance in e. Massachusetts and s. Wisconsin in spring of 1872); xvii, 1875, 439 (n. New England, breeding).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 251, pl. 13, figs. 4, 5.—TURNER, Proc. U. S. Nat. Mus., viii, 1885, 237 (Moose Factory and Hamilton Inlet, Hudson Bay).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 660.—COOKE, Bird Migr. Miss. Val., 1888, 250 (Nebraska, etc.; breeding at Portage la Prairie, Manitoba dates etc.).—RIDGWAY, Orn. Illinois, i, 1889, 146.—THOMSON,

- Natl. Orn. Club, viii, 1882, 9 (s. e. Texas). —SHARPE, Cat. Birds Brit. Mus., x, 1885, 320-650 (Bucaramanga, Remedios, and Medellín, Colombia; Panama and Chepo, Isthmus of Panama; Veragua).  
 [*Dendroica*] *cassina* COUES, Key N. Am. Birds, 1872, 101. —SLATER and SALVIN, Nom. Av. Neotr., 1873, 9.  
*D[endroica]* *cassina* COUES, Key N. Am. Birds, 2d ed., 1884, 304.  
*Dendroica cassina* SINDELL, Öfv. k. Vet.-Ak. Forh. Stockh., xxvi, 1870, 614 (monogr.).  
*Sylvia autumnalis* WILSON, Am. Orn., iii, 1811, 65, pl. 23, fig. 3. —STEPHENS, Shaw's Gen. Zool., x, 1817, 632. —VIEILLLOT, Enc. Méth., ii, 1823, 448. —BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 195, Ann. Lyc. N. Y., ii, 1826, 84. —NUTTALL, Man. Orn. U. S. and Can., i, 1832, 390. —AUDUBON, Orn. Biog., i, 1831, 447, pl. 88.

## DENDROICA STRIATA (Forster).

## BLACK-POLL WARBLER.

*Adult male in spring and summer.* Entire pileum uniform black; hindneck streaked with black and white, in varying relative proportion; back and scapulars broadly streaked with black on a gray, pale olive, or (more rarely) wood brown ground; rump and upper tail-coverts similar but less distinctly streaked, often (especially the rump) without streaks; tail dusky, with light gray edgings, the inner webs of two or three outermost rectrices with a subterminal patch of white (largest on the lateral rectrix); wings dusky with light olive edgings (more yellowish olive on primaries), the middle and greater coverts broadly tipped with white, forming two conspicuous bands; sides of head white, including lower eyelid, suborbital region, auricular region, and malar region; sides of neck streaked with black and white; under parts white, broadly streaked laterally with black, the black streaks on sides of throat coalesced into two stripes converging and usually united on chin, forming a conspicuous V-shaped mark; under tail-coverts immaculate pure white; maxilla dusky with paler tints; mandible horn brownish, paler basally; iris brown; legs and feet pale yellowish brown in dried skins (yellowish in life); length (skins), 118-140 (125.8); wing, 71.4-77.6 (74.2); tail, 48.6-54 (51.3); tarsus, 18.4-20.4 (19.1); middle toe, 10.8-13 (12).<sup>1</sup>

*Adult female in spring and summer.* Above varying from olive-green to gray, streaked, more or less broadly, with blackish, the streaks usually more or less obsolete on rump; wings and tail as in adult male, but white wing-bands tinged with yellow (except in specimens having a gray upper surface); under parts varying from white to pale olive yellow (with all intermediate conditions—the under tail-coverts always white), more or less distinctly streaked laterally with black or dusky, the streaks usually most distinct on sides of throat

<sup>1</sup> Twenty-five specimens.

and breast; length (skins), 115-127 (120.1); wing, 69-75 (71.5); tail, 45-51 (48.4); exposed culmen, 9-11 (10); tarsus, 18-20 (19.1); middle toe, 10.5-12 (11.5).<sup>1</sup>

*Adult male in autumn and winter.*<sup>2</sup>--Very different from the summer plumage. Above dull olive-green, passing gradually into dull gray on upper tail-coverts; back and scapulars (sometimes also pileum, rump, or upper tail-coverts) narrowly streaked with black; wings and tail as in summer plumage, but white wing-bands usually tinged with yellow; a narrow and indistinct superciliary streak of pale olive-yellowish, the upper eyelid whitish; auricular region and sides of neck olive or dull olive-greenish, like general color of upper parts; malar region, chin, throat, chest, breast, and sides pale olive-yellow or straw yellow, the sides and flanks indistinctly streaked with dusky; abdomen, anal region, and under tail-coverts white.

*Young in first autumn and winter.*<sup>3</sup>--Similar to the adult male at same seasons, but under parts more extensively yellowish (only the under tail-coverts white), upper tail-coverts dull olive-greenish, like back, etc., instead of grayish, and back usually less distinctly streaked.

*Young, first plumage.*--Pileum, back, and scapulars light grayish brown streaked with black, the streaks more or less wedge-shaped, especially on back; rump very pale grayish brown or light buffy gray, transversely mottled or barred with black; upper tail-coverts grayish brown with indistinct paler tips and dusky shaft-streaks; under parts whitish, tinged with olive-yellow anteriorly, everywhere, except on under tail-coverts and lower abdomen, transversely mottled with dusky; wings and tail as in winter plumage.



Bay to northern and western Alaska (Kowak River, Hotham Inlet, Nulato, etc.), southward to Gulf of St. Lawrence (Magdalen Islands, Anticosti Island), northern New England (mountains of Vermont, etc.), northeastern New York (Adirondack and Catskill Mountains), northern Michigan (Mackinac Island), Manitoba (?), and Colorado (Seven Lakes); west (during migration) to New Mexico, Colorado, and Montana. In winter southward through West Indies (Bahamas, Cuba, Grand Cayman, Jamaica, Porto Rico, Santa Lucia, Guadeloupe, Barbados, etc.) to Tobago, Trinidad, and continent of South America (Guiana, Venezuela, Colombia, Ecuador, Brazil, and Chili). No Mexican nor Central American record. Accidental in southern Greenland (Godthaab, in 1853).

*Muscicapa* . . . *strata* FORSTER, Philos. Trans., lxxii, 1772, 406 (Severn River).

*Muscicapa strata* FORSTER, Philos. Trans., lxxii, 1772, 428 (Hudson Bay).

[*Muscicapa*] *strata* Gmelin, Syst. Nat., i, 1788, 930. LATHAM, Index Orn., ii, 1790, 481. — STEPHENS, Shaw's Gen. Zool., x, 1817, 370.

[*Motacilla*] *strata* Gmelin, Syst. Nat., i, pt. ii, 1788, 970 (based on *Black-poll Warbler* Latham, Gen. Synop. Birds, ii, 460, Pennant, Arct. Zool., ii, 401).

[*Sylvia*] *strata* LATHAM, Index Orn., ii, 1790, 527.

*Sylvia strata* Vieillot, Obs. Ann. Sept., ii, 1807, 22, pls. 75, 76; Nouv. Dict. d'Hist. Nat., xi, 1817, 219, 222, Enc. Méth., ii, 1823, 441, 464. — Wilson, Am. Orn., iv, 1811, 40, pl. 30, fig. 3, vi, 1812, 101, pl. 54, fig. 4 (female). — STEPHENS, Shaw's Gen. Zool., x, 1817, 645. BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 199; Ann. Lyc. N. Y., ii, 1826, 81. NUTTALL, Man. Orn. U. S. and Can., i, 1832, 383. — AUDUBON, Orn. Biog., ii, 1834, 201, pl. 133. LEBBEYE, Aves de la Isla de Cuba, 1850, 33.

*Sylviicola strata* SWINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 218. BONAPARTE, Geog. and Comp. List, 1838, 22. AUDUBON, Synopses, 1839, 52, Birds Am., oct. ed., ii, 1841, 28, pl. 78. — REINHARDT, Journ. fur Orn., 1854, 427 (Greenland). HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 309 (Rio Minibres, New Mexico). BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia), vii, 1859, 110 (Bahamas). BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba). — ALBRECHT, Journ. fur Orn., 1861, 52 (Bahamas).

[*Sylviicola*] *strata* BONAPARTE, Consp. Av., i, 1850, 308.

[*Mniotilta*] *strata* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *strata* GRAY, Hand-list, i, 1869, 240, no. 3474.

*Mniotilta strata* REINHARDT, Ibis, 1861, 6 (Godthaab, Greenland).

[*Rhammophus*] *stratus* CABANIS, Mus. Heim., i, 1850, 20.

*Rhammophus stratus* GUNDELACH, Journ. fur Orn., 1855, 475 (Cuba), 1861, 409 (do). — SCLATER, Proc. Zool. Soc. Lond., 1855, 143 (Bogota, Colombia).

*Dendroica strata* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 280, Cat. N. Am. Birds, 1859, no. 202, Review Am. Birds, 1865, 163, 192. — HENRY, Proc. Ac. Nat. Sci. Phila., xi, 1859, 106. New Mexico. — COLES, Proc. Ac. Nat. Sci. Phila., 1863, 220 (Labrador). — B. ARISTON, Ibis, 1862, 4 (Saskatchewan). — DALL and BAXSTER, Trans. Chicago Ac. Sci., i, 1869, 278. Nulato, Alaska. DALL, Am. Nat., iv, 1870, 600. Yukon R., Alaska. — GENDRON, Repert. Fauno-Nat. Cuba, i, 1865, 234, Journ. fur Orn., 1872, 414 (Cuba). — ANN. Soc. Esp. Hist. Nat., vii, 1878, 181 (Porto Rico). — BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 248, pl. 13, figs. 9, 12. — BREWER, Proc. Bost. Soc. N. H., 1875, 439 (in New England breeding). — HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1874, 59. Denyer, Colorado, May 17. Zool. Exp. W. 100th Merid.,

- 1875, 198 (do.).—TURNER, Proc. U. S. Nat. Mus., viii, 1885, 237 (Fort Chimo, Ungava, breeding).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 661.—CORY, Auk, iii, 1886, 35 (West Indian references); ix, 1892, 49 (Watlings I., Bahamas); Birds W. I., 1889, 49; Cat. W. I. Birds, 1892, 118 (New Providence, Watlings I., Great Inagua, and Arguilla, Bahamas; Cuba; Grand Cayman; Jamaica; Porto Rico; Barbados).—TOWNSEND, Auk, iv, 1887, 13 (Kowak R., n. w. Alaska).—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 202.—COOKE, Bird Migr. Miss. Val., 1888, 251 (dates of migr., etc.).—RIDGWAY, Orn. Illinois, i, 1889, 147.—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 619 (Manitoba; breeding?).—MACFARLANE, Proc. U. S. Nat. Mus., xiv, 1891, 444 (Anderson R., arctic Am., breeding).—NEBELING, Our Native Birds, etc., i, 1893, 217, pl. 12, fig. 3.—WHITE, Auk, x, 1893, 228 (Mackinac I., Michigan, rare sum. resid.).—THORNE, Auk, xii, 1895, 218 (Fort Keogh, Montana, common in May).—BISHOP, N. Am. Fauna, no. 19, 1900, 90 (Log Cabin, Lake Marsh, and Caribou Crossing, Alaska).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 177 (Bonda, province Santa Marta, Colombia, Oct., Nov.).—OSGOOD, N. Am. Fauna, no. 21, 1901, 79 (Fort Kenai, Alaska).—HOWELL, Auk, xviii, 1901, 344 (Mount Mansfield, Vermont, breeding).—BIGLOW, Auk, xix, 1902, 30 (Labrador, breeding north to limit of tree growth).—*Dendroica striatus* GUNDLACH, Journ. für Orn., 1861, 326 (Cuba).—*Dendroica striata* SCLATER, Cat. Am. Birds, 1862, 31 (Jamaica; Tobago; Bogota).—BLAKINSON, Ibis, 1863, 62 (interior British America).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 780 (Merida, Venezuela).—COUES, Check List, 1873, no. 81; 2d ed., 1882, no. 122; Birds N. W., 1874, 60; Birds Col. Val., 1878, 288.—NEWTON, Man. Nat. Hist. Greenland, 1875, 97 (Godthaab, 1 spec., 1853).—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 166 (Santa Lucia, Lesser Antilles).—MINOR, Bull. Nutt. Orn. Club, v, 1880, 227 (Seven Lakes, Colorado, summer resident; Denver, May).—CORY, Birds Bahama I., 1880, 61.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 101.—ALLEN and BREWSTER, Bull. Nutt. Orn. Club, viii, 1883, 158 (Austin's Bluffs, Colorado, May 8, 9).—BREWSTER, Proc. Bost. Soc. N. H., xxii, 1883, 371 (Magdalen Islands and Anticosti I., breeding).—LAWRENCE, Proc. U. S. Nat. Mus., viii, 1885, 622

## DENDROICA VIGORSII VIGORSII (Audubon).

## PINE WARBLER.

Largest species of the genus (wing 67.5–76 in male, 66.5–70 in female); upper parts (except wings and tail) unicolored (plain olive-green, grayish olive, or olive-brownish); wing-bands dull white or grayish.

*Adult male in spring and summer.*—Above plain bright olive-green, usually becoming more grayish on scapulars; wings and tail dusky with dull gray edgings, the middle and greater wing-coverts broadly tipped with dull white or pale gray, producing two distinct bands; inner webs of two outermost rectrices extensively white terminally, the white on lateral rectrix occupying nearly the terminal half, the outer web more or less broadly edged with white; sides of head and neck olive-green, the former relieved by a narrow, usually indistinct, superciliary streak and a crescentic suborbital spot of yellow, the lores usually darker olive-green, often becoming dusky at anterior angle of eye; malar region, chin, throat, chest, and breast—usually upper portion of abdomen also—yellow (intermediate between gamboge and canary yellow), the sides of chest and breast usually streaked, more or less, with olive-greenish, sometimes distinctly streaked with dusky; posterior under parts dull whitish, the under tail-coverts gray basally; bill brownish black, the mandible more brownish basally; iris brown; legs and feet dusky brown.

*Adult male in autumn and winter.*—Similar to the spring and summer dress, but plumage softer and colors purer, especially the yellow of under parts, which is nearly clear lemon yellow; bill more brownish, the basal portion of mandible decidedly paler.

*Adult female in spring and summer.*—Smaller and much duller in color than the male; above plain olive, or dull olive-greenish, inclining to gray on hindneck and scapulars, sometimes almost wholly dull gray; beneath pale olive-yellowish anteriorly and dull whitish posteriorly, sometimes wholly dull grayish white, faintly tinged with yellow on chest, the sides and flanks more strongly tinged with olive or grayish, and sometimes obsoletely streaked with darker, especially on sides of chest; wings and tail as in the male.

*Adult female in autumn and winter.*—Similar to the spring and summer dress, but plumage softer, the upper parts tinged with brown and under parts tinged with buff.

*Young male in first autumn and winter?*—Similar to the adult male of corresponding season, but upper parts tinged with brown, the lower parts with buff.

*Young female in first autumn and winter.*—Similar to the adult female of corresponding season, but more decidedly brown above and more strongly tinged with buff below.

*Young male, first plumage.*—Above plain broccoli brown, the wings and tail as in the adult, but wing-bands narrower, more or less strongly buffy; beneath dull whitish, strongly shaded across chest and along sides and flanks with pale broccoli brown.

*Young female, first plumage.*—Similar to the young male, but upper parts rather less decidedly brown.

*Adult male.*—Length (skins), 118–136 (125.2); wing, 67.5–76 (72.3); tail, 51.5–58 (54.4); exposed culmen, 10–12 (10.9); depth of bill at nostrils, 4–4.5 (4.2); tarsus, 17.5–19.5 (18.5); middle toe, 12–13.5 (12.7).<sup>1</sup>

*Adult female.*—Length (skins), 115–128 (120.2); wing, 66.5–70.5 (68.4); tail, 50.5–53.5 (52.2); exposed culmen, 9.8–11 (10.6); depth of bill at nostrils, 4; tarsus, 17–19 (18.2); middle toe, 12–13.5 (12.4).<sup>2</sup>

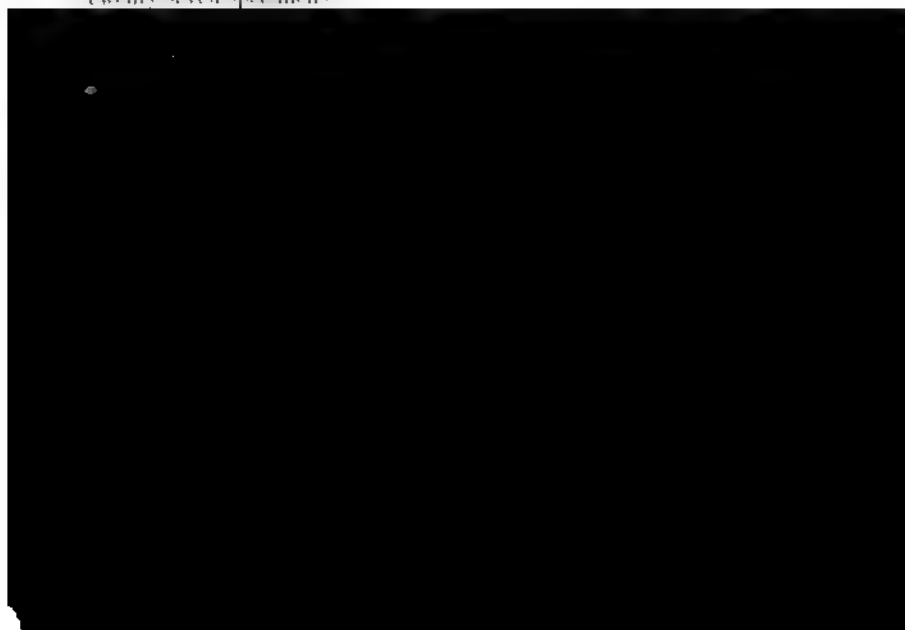
Eastern United States and more southern British Provinces, north to Minnesota, Manitoba (to Lake Winnipeg), Ontario (Lake Muskoka, Hamilton, etc.), New York, southern Maine, and New Brunswick; breeding southward to southern Florida and Gulf States, wintering in Southern States (Florida to Texas) and northward to coast district of Virginia, southern Illinois, etc., occasionally to Massachusetts; occasional in Bermudas.

*Sylvia pinus* (not of Latham, 1790) WILSON, Am. Orn., iii, 1811, 25, pl. 19, fig. 4.—STEPHENS, Shaw's Gen. Zool., x, 1817, 737, part.—VIEILLLOT, Enc. Méth., ii, 1823, 464.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 194; Ann. Lyc. N. Y., ii, 1826, 81.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 387.—AUDUBON, Orn. Biog., ii, 1834, 132, pl. 111.

*Th[rothurus] ? pinus* STEPHENS, Shaw's Gen. Zool., xiv, 1826, 194, part.

*Sylvicola pinus* JARDINE, ed. Wilson's Am. Orn., i, 1832, 316, pl., 19, fig. 4.—RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and

Twenty-seven specimens



Comp. List, 1838, 22.—AUDUBON, Synopsis, 1839, 54; Birds Am., oct. ed., ii, 1841, 37, pl. 82.—HURDIS, Jardine's Contr. Orn., 1850, 35 (Bermudas, Oct.).—WOODHOUSE, Rep. Sitgreaves' Exp. Zuffi and Col. R., 1853, 70 (Texas).—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin).—KENNICOTT, Trans. Ills. Agric. Soc., 1855, 583 (Illinois).—MARTENS, Journ. für Orn., 1859, 312 (Bermudas).—BLAND, Ann. Rep. Smithson. Inst. for 1859 (1860), 287 (Bermudas).—TRIPPE, Proc. Essex Inst., vi, 1871, 114 (Minnesota?).

[*Vermivora*] *pinus* SWAINSON Classif. Birds, ii, 1837, 245.

*Mniotilta pinus* SWAINSON, Birds W. Africa, i, Mar., 1837, 273, in text.

*M[niotilta]* *pinus* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *pinus* GRAY, Hand-list, i, 1869, 241, no. 3484.

[*Rhimamphus*] *pinus* BONAPARTE, Consp. Av., i, 1850, 311.

*Dendroica pinus* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 277; Cat. N. Am. Birds, 1859, no. 198; Review Am. Birds, 1865, 190.—VERRILL, Proc. Essex Inst., iii, 1862, 156 (Maine).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 268, pl. 13, fig. 6.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (s. New England, breeding).

*D[endroica]* *pinus* RIDGWAY, Ann. Lyc. N. Y., x, 1874, 368 (Illinois, breeding).

*Dendræca pinus*<sup>1</sup> SCLATER, Cat. Am. Birds, 1862, 31 (Pennsylvania).—MCILWRAITH, Proc. Essex Inst., v, 1866, 86 (Hamilton, Ontario).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 268 (e. Florida, abt. winter).—COUES, Check List, 1873, no. 91, 2d ed., 1882, no. 134; Birds N. W., 1874, 69; Birds Col. Val., 1878, 251.—BROWN (N. C.), Bull. Nutt. Orn. Club, iv, 1879, 107 (s. Maine, breeding).—ROBERTS and BENNER, Bull. Nutt. Orn. Club, v, 1880, 13 (Herman, Minnesota).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 111.—NEHRLING, Bull. Nutt. Orn. Club, vii, 1882, 9 (Harris Co., s. e. Texas, winter).—BROWNE, Bull. Nutt. Orn. Club, vii, 1882, 119 (Framingham, Massachusetts, Dec. 5; 4 specs.).—MERRIAM, Bull. Nutt. Orn. Club, vii, 1882, 128 (Adirondacks, New York, 1 spec., May).—GRUNDTVIG, Bull. Nutt. Orn. Club, viii, 1883, 71 (Shiocton, Wisconsin, Apr. 31 to May 12).—BREWSTER, Bull. Nutt. Orn. Club, viii, 1883, 120 (Duxbury, Massachusetts, Dec. 27).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 323, 650.—AGERSBORG, Auk, ii, 1885, 278 (s. e. South Dakota).

[*Dendræca*] *pinus* COUES, Key N. Am. Birds, 1872, 105.

*D[endræca]* *pinus* NELSON, Bull. Essex Inst., viii, 1876, 100, 152 (n. e. Illinois, breeding).—COUES, Key N. Am. Birds, 2d ed., 1884, 307.

*Dendroeca pinus* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 612 (monogr.).

*Dendræca pina* COUES, Proc. Essex Inst., v, 1868, 272.—MAYNARD, Birds Florida, 1873, 48.

*Sylvia vigorsii* AUDUBON, Orn. Biog., i, 1831, 153, pl. 30 (Perkioming Creek, e. Pennsylvania).

*Vireo vigorsii* NUTTALL, Man. Orn. U. S. and Can., i, 1832, 318.

*Dendroica vigorsii*<sup>1</sup> RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 356; Orn. Illinois, i, 1889, 152.—STEJNEGER, Auk, ii, Oct., 1885, 343.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 671.—SETON, Auk, iii, 1886, 326

<sup>1</sup> The following West Indian citations I am not able, in the absence of specimens, to correctly place:

*Dendræca pinus* CORY, Birds Haiti and San Dom., 1885, 33.

*Dendroica vigorsii* CORY, Auk, viii, 1891, 352 (Cay Sal, Bahamas); Cat. W. I. Birds, 1892, 118, part (Great Bahama, Andros, and Cay Sal islands, Bahamas; Haiti).

They are more likely to refer to *D. v. achrustera* or *D. v. abacoensis*—or some insular form or forms—than to true *D. vigorsii*.

(Lake Winnipeg).—COOKS, Bird Migr. Miss. Val., 1888, 254 (Mississippi Valley localities, etc.; winters north to s. Illinois).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 620 (Manitoba, breeding).—SCOTT, Auk, vii, 1890, 20 (Tarpon Springs, Florida, breeding).—RALPH and BAGO, Auk, vii, 1890, 232 (Oneida Co., New York, breeding).—GOSS, Birds Kansas, 1891, 567 (migrant).—BRIMLEY, Auk, viii, 1891, 199 (Raleigh, North Carolina; breeding habits).—ATSWATER, Auk, ix, 1892, 341 (San Antonio, Texas; rare migr.).—WHITE, Auk, x, 1893, 228 (Mackinac I., Michigan; rare sum. resid.).—NEHRLING, Our Native Birds, etc., i, 1893, 232.—MCLlwRAITH, Birds Ontario, 1894, 371 (Hamilton, Ontario, breeding).—ALLEN, Auk, xii, 1895, 89 (Berkshire Co., Massachusetts, breeding).—WAYNE, Auk, xii, 1895, 365 (Wacissa and Aucilla rivers, n. w. Florida, breeding).—HENNINGER, Auk, xv, 1898, 331 (Waverly, Ohio, breeding).—BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 114 (Louisiana, breeding).—FLEMING, Auk, xviii, 1901, 44 (Lake Muskoka, Ontario, 1 spec., Apr. 30, 1898).

*D[endroica] r[igorsii] rigorsii* RIDGWAY, Auk, xix, Jan., 1902, 69, in text.

#### DENDROICA VIGORSII ACHRUSTERA (Bangs).

##### NASSAU FINE WARBLER.

Similar to *D. v. vigorsii*, but wing much shorter, tail relatively longer, and bill and feet larger; yellow of under parts averaging paler, not extending to flanks or lower abdomen; yellow supraloral line averaging broader, more distinct; white on inner webs of lateral rectrices more restricted. Young (in first plumage) with upper parts much browner (cinnamon-brown or nearly prouts brown).

*Adult male*.—Length (skins), 117-130 (123.2); wing, 64-69 (65.9); tail, 54-56 (54.2); exposed culmen, 11.5-12.5 (12); depth of bill at nostrils, 4-4.5 (4.1); tarsus, 18.5-19 (18.9); middle toe, 18-13.5 (13.4).<sup>1</sup>

*Adult female*.—Length (skins), 120-123 (121.5); wing, 62-63 (62.5); tail, 51.5-52 (51.7); exposed culmen, 12-12.5 (12.2); depth of bill at

*Dendroica vigorsii* (not *Sylvia vigorsii* Audubon) CORY, Auk, iii, 1886, 39, part (Bahamas, part); Birds W. I., 1889, 53, part (do.); Cat. W. I. Birds, 1892, 118 part (New Providence I., Bahamas).—RIDGWAY, Auk, viii, 1891, 335 (New Providence, Apr. 17, 19).

*Dendroica bahamensis* (not *D. pityophila bahamensis* Cory, 1891) MAYNARD, App. to Cat. of Birds of the W. I., Nov. 29, 1899, 33 (New Providence I., Bahamas; coll. C. J. Maynard).<sup>1</sup>

*Dendroica achrustera* BANGS, Auk, xvii, July, 1900, 292 (Nassau, New Providence I., Bahamas; coll. E. A. and O. Bangs).

*D[endroica] vigorsii achrustera* RIDGWAY, Auk, xix, Jan., 1902, 69, in text.

### DENDROICA VIGORSII ABACOENSIS Ridgway.

#### ABACO PINE WARBLER.

Similar to *D. v. vigorsii*, but decidedly larger, with relatively shorter wing and with under parts more extensively whitish posteriorly; similar to *D. v. achrustera*, but larger and with yellow of under parts brighter and with flanks much less strongly tinged with brown.

*Adult male*.—Length (skin), 133; wing, 70; tail, 57; exposed culmen, 13.5; depth of bill at nostrils, 5; tarsus, 20; middle toe, 13.5.<sup>2</sup>

Island of Abaco, Bahamas.

(?) *Dendroica pinus* (not *Sylvia pinus* Wilson, nor of Latham) CORY, Birds Bahama Is., 1880, 69, part.

(?) *Dendroica vigorsii* (not *Sylvia vigorsii* Audubon) CORY, Auk, iii, 1886, 39, part (Bahamas, part); Birds W. I., 1889, 53, part (do.).

*Dendroica vigorsii* RIDGWAY, Auk, viii, 1891, 334 (Abaco I., Bahamas, Apr. 1).—CORY, Cat. W. I. Birds, 1892, 118, part (Abaco I.).

*Dendroica vigorsii abacoensis* RIDGWAY, Auk, xix, Jan., 1902, 69 (Abaco Island, Bahamas; coll. U. S. Nat. Mus.).

### DENDROICA KIRTLANDII Baird.

#### KIRTLAND'S WARBLER.

*Adult male in spring*.—Pileum, hindneck, sides of neck, and auricular region bluish slate-gray or dull plumbeous, the first usually more or less streaked with black; anterior portion of forehead, lores, and space between lower eyelid and malar region black, gradually blending posteriorly into the gray of the auricular region; a white crescentic spot or bar on lower eyelid, and a smaller, narrower mark of white on upper eyelid; back and scapulars brownish gray or hair brown, broadly streaked with black; rump and upper tail-coverts slate-gray, narrowly (sometimes obsoletely) streaked with black; wings and tail dusky with pale brownish gray or grayish brown edgings, the middle and greater wing-coverts margined terminally with paler brownish gray or grayish

<sup>1</sup> Type now in the collection of E. A. and O. Bangs, Boston, Massachusetts.

<sup>2</sup> One specimen, the only one seen.

brown, sometimes approaching dull white; inner webs of two outermost rectrices with a terminal white spot, this about 18-22 long on the lateral rectrix; malar region, chin, throat, and rest of under parts pale lemon, canary, or primrose yellow, fading into white on under tail-coverts; sides and flanks grayish, streaked with dusky, the pronounced gray area on each side of breast separated from the yellow of the median portion by a series of broad black streaks; chest usually with a few small flecks of dusky, sometimes immaculate yellow; maxilla blackish with pale brownish tomia; mandible horn brownish, darker terminally, paler basally; iris brown; legs and feet dark horn brownish; length (skins), 125-150 (134.6); wing, 70-72 (71.4); tail, 57-65 (58.8); exposed culmen, 11-13 (11.9); tarsus, 21.5-23 (22.3); middle toe, 12-13 (12.6).<sup>1</sup>

*Adult female in spring.*—Similar to the adult male, but duller in color; the bluish slate-gray of pileum, hindneck, and rump replaced with brownish gray; black streaks of back and scapulars rather narrower; yellow of under parts averaging slightly paler, and chest more frequently as well as more extensively speckled or flecked with dusky; length (skins) 126-138 (132.1); wing, 64-71 (66.7); tail, 53-58 (56.4); exposed culmen, 11-13 (11.9); tarsus, 21-22 (21.3); middle toe, 12-13 (12.3).<sup>2</sup>

Eastern United States and more southern British Provinces, chiefly west of the Alleghenies; very irregularly distributed and breeding range unknown; has been taken in the following States: Ohio (Cleveland; Rockport; Hamilton County); Indiana (Wabash); Illinois (Winnebago and Cook counties); Missouri (St. Louis County); Minnesota (Minneapolis); Wisconsin (Racine); Michigan (Ann Arbor; Straits of Mackinac); Virginia (Fort Myer); South Carolina (Chester); also in



lings I., Green Cay, North Caicos, Grand Caicos, and East Caicos, Bahamas).—COOKE, Bird Migr. Miss. Val., 1888, 254 (St. Louis, Missouri, May 8).—SMITH and PALMER, Auk, v, 1888, 148 (Fort Myer, Virginia, Sept. 25).—WASHBURN, Auk, vi, 1889, 280 (Ann Arbor, Michigan, May 1).—LOOMIS, Auk, viii, 1891, 171 (Chester Co., South Carolina, Oct. 11).—GUILFORD, Auk, x, 1891, 86 (Minneapolis, Minnesota, May 13).—NEHRLING, Our Native Birds, etc., i, 1893, 231.—GAULT, Auk, xi, 1894, 258 (Glen Ellyn, n. e. Illinois, May 7).—ULREY, Proc. Ind. Ac. Sci., 1895, 147 (Wabash, Indiana, May, 1895).—ULREY and WALLACE, Proc. Ind. Ac. Sci., 1895, 157 (Wabash, Indiana, May 4, 1892).—BUTLER, Proc. Ind. Ac. Sci., 1895, 168 (Wabash, Indiana, May 7, 1895).—CHAPMAN, Auk, xv, 1898, 289, pl. 4 (historical, etc.); xvi, 1899, 81 (Winnebago Co., Illinois, May 25, 1894).—BLACKWELDER, Auk, xvi, 1899, 359 (Morgan Park, Chicago, Illinois, May 21, 1899).—BANGS, Auk, xvii, 1900, 292 (New Providence I., Bahamas, Mar. 4 and Apr. 5).—SAMUEL, Auk, xvii, 1900, 391 (Toronto, Ontario, May 16, 1900).

*D[endroica] kirtlandi* RIDGWAY, Man. N. Am. Birds, 1887, 514.

*Dendroeca kirtlandi* SUNDEVALL, Öfv. k. Vet.-Akad. Förh. Stockh., xxvi, 1870, 617 (monogr.).

[*Dendroica*] *kirtlandii* COUES, Key N. Am. Birds, 1872, 104.

*Dendroica kirtlandi* COUES, Check List, 1873, no. 89; 2d ed., 1884, no. 131. Birds Col. Val., 1878, 249; Bull. Nutt. Orn. Club, v, 1880, 49 (Ann Arbor, Michigan, May 16; descr. adult female).—LANGDON, Cat. Birds Cincinnati, 1877, 6 (Avondale, Hamilton Co., Ohio).—CORY, Bull. Nutt. Orn. Club, iv, 1879, 118 (Andros I., Bahamas, Jan. 9; descr. adult female); Birds Bahamas I., 1880, 66.—PURDIE, Bull. Nutt. Orn. Club, iv, 1879, 185 (Ann Arbor, Michigan, May 16; list of known specimens).—WHEATON, Bull. Nutt. Orn. Club, iv, 1879, 58 (Rockport, Cuyahoga Co., Ohio, 2 or 3 specs., spring of 1878).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 110.—MERRIAM, Auk, ii, 1885, 376 (Straits of Mackinac, Michigan, May 21, 1885).—WIDMANN, Auk, ii, 1885, 382 (near St. Louis, Missouri, May 8, 1885).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 322.

[*Dendroica*] *kirtlandi* CORY, List Birds W. I., 1885, 8.

*D[endroica] kirtlandi* COUES, Key N. Am. Birds, 2d ed. 1884, 306.

[*Mniotilta*] *kirtlandii* GRAY, Hand-list, i, 1869, 241, no. 3492.

[*Mniotilta*] *kirtlandi* GIEBEL, Thesaurus Orn., ii, 1875, 603.

## DENDROICA PITYOPHILA PITYOPHILA (Gundlach).

### CUBAN WARBLER.

*Adult in spring and summer.*—Forehead and crown yellowish olive-green, obsoletely streaked with darker; rest of upper parts, including sides of head and neck, plain slate-gray, the lores and suborbital region more dusky; wings and tail dusky with light brownish gray edgings, the middle and greater wing-coverts tipped with pale brownish gray, producing two indistinct bars across wing; inner webs of two lateral rectrices with a large white terminal wedge-shaped spot; chin, throat, median portion of chest, and part of malar region light lemon or canary yellow; rest of under parts dull white medially, pale brownish gray laterally, the flanks more tinged with brown; between the yellow on lower throat and median portion of breast and the gray on

sides of neck and chest a series of broad black streaks or spots, these sometimes extending beyond the yellow over sides of breast, where the gray on each side encroaches more upon the white of the median portion; bill black; legs and feet dark horn brown; length (skins), 111.8–114.3 (113); wing, 56–60.4 (58.9); tail, 48.2–50.3 (49.4); exposed culmen, 10–10.4 (10.3); tarsus, 16–16.7 (16.4); middle toe, 10.6–11 (10.8).<sup>1</sup>

*Adult (?) male in winter.*<sup>2</sup>—Similar to the spring and summer plumage but general color of upper parts smoke gray, less strongly contrasted with olive-green of crown and forehead; sides and flanks more strongly tinged with pale brown; black streaks along lateral margin of yellow chest-patch less distinct, and bill light horn brownish instead of black.

*Adult female in spring and summer.*—Similar to the adult male of corresponding season and not always distinguishable, but usually very slightly duller in color, or with the black streaks along lateral margin of yellow chest-patch smaller or less distinct; length (skins), 109.2–115.6 (111.8); wing, 55.9–57.7 (57); tail, 47.5–48.3 (48.5); exposed culmen, 10.2–10.7 (10.4); tarsus, 16.3–16.8 (16.5); middle toe, 10.7–11.4 (11).<sup>3</sup>

Island of Cuba, Greater Antilles (in pine woods).

*Sylviola pityophila* GUNDLACH, Ann. Lyc. Nat. Hist. N. Y., vi, 1855, 160 (Cuba).—

BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307.

*Rhinamphus pityophilus* GUNDLACH, Journ. für Orn., 1857, 240.

*Dendroica pityophila* BAIRD, Review Am. Birds, Apr., 1865, 208. — COVEY, Auk, iii, 1886, 38, Birds W. I., 1889, 52; Cat. W. I. Birds, 1892, 18, 118, 129.

*D[endroica] pityophila* RIDGWAY, Man. N. Am. Birds, 1887, 515.

*D[endroica] pityophila* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 221.

*D[endroica] pityophila* GUNDLACH, Report Fisico-Nat. Cuba, i, 1865, 234. — COVEY

Belly dull white shading into gray on the sides and flanks. A faint indication of wing bands, showing very faintly in some specimens. Tail dark brown, the two outer feathers showing an arrow-shaped white mark on the terminal portion of the inner webs, variable in different specimens; most of the feathers of the wings and tail showing very narrow grayish edging on the outer webs. Bill and feet dark brown. Closely allied to *Dendroica pityophila* of Cuba. Length, 4.50; wing, 2.30; tail, 2.00; tarsus 0.60; bill, 0.45.

"The female resembles the male, but the colors are slightly paler, and it is perhaps somewhat smaller.

"*Habitat*.—Abaco and Great Bahama islands, Bahamas."<sup>1</sup>

*Dendroica pityophila bahamensis* CORY, Auk, viii, Oct., 1891, 348 (Abaco I., Bahamas; coll. C. B. Cory), 350 (Great Bahama and Abaco islands); Cat. W. I. Birds, 1892, 18, 118, 127, 155 (Abaco and Great Bahama islands).

### DENDROICA DISCOLOR (Vieillot).

#### PRAIRIE WARBLER.

*Adult male in spring and summer*.—Above yellowish olive-green, brightest on pileum and hindneck, slightly tinged or intermixed with grayish on upper tail-coverts; interscapulars chestnut centrally, more or less broadly margined or edged with olive-green; wings and tail dusky, with pale grayish olive edgings, the middle wing-coverts broadly tipped with pale yellow or light olive-yellow, the outer webs of greater coverts sometimes yellowish terminally; inner webs of three outermost rectrices extensively white terminally, this occupying approximately one-half the web on lateral rectrix, successively smaller on the next two; superciliary stripe (broadest anteriorly), large suborbital crescentic spot, malar region and under parts clear gamboge or lemon yellow, paler posteriorly (under tail-coverts primrose yellow); a loreal and short postocular streak, a broad curved streak or crescentic patch immediately beneath the yellow suborbital spot, and a series of broad black streaks beginning on sides of lower throat and continued along sides to flanks, black; bill dark brown (the maxilla nearly black), paler on tomia; iris brown; legs and feet dusky brown.

*Adult male in autumn and winter*.—Similar to the spring and summer plumage, but chestnut spots on back more or less concealed (often quite so) by broader olive-green margins to the feathers.

*Adult female in spring and summer*.—Similar to the male and sometimes hardly distinguishable, but usually much duller in color, with the chestnut spots on back indistinct (often obsolete); the black markings on sides of head replaced by dull grayish, and the black streaks along sides less distinct, especially on flanks, where grayish, or obsolete; olive-green of upper parts sometimes partly replaced by grayish, and yellow of lower parts by dull whitish.

<sup>1</sup>Cory, Auk, viii, Oct., 1891, 348.

*Adult female in autumn and winter.*—Similar to the spring and summer plumage, but plumage softer and colors more blended.

*Immature male in first autumn and winter.*—Similar to the adult male of corresponding season, but concealed chestnut spots on back smaller; tips of middle wing-coverts duller pale yellowish olive; olive-green of head more or less tinged with gray; black markings on sides of head much less distinct; black streaks on sides and flanks narrower, and mandible pale brownish (dull flesh color in life?), with darker tip.

*Immature female in first autumn and winter.*—Similar to the adult female of corresponding season, but duller olive-green above; pattern of sides of head indistinct or obsolete, and streaks along sides and flanks still less distinct, sometimes obsolete.

*Young female, first plumage.*—Above plain hair brown or grayish broccoli brown; remiges and rectrices dusky, with pale yellowish gray edgings; middle and greater wing-coverts tipped with pale buffy, producing two narrow bars across wing; sides of head plain pale hair brown, relieved by a small and narrow spot of dull yellowish white on each eyelid; chin, throat, and chest pale hair brown; rest of under parts dull yellowish white, or pale dull primrose yellow, the breast narrowly streaked with hair brown.

*Adult male.*—Length (skins), 105–117 (111); wing, 55.5–59 (57.6); tail, 45–50 (47.8); exposed culmen, 8.8–10 (9.4); tarsus, 17.5–19.5 (18.3).<sup>1</sup>

*Adult female.*—Length (skins), 100–111 (105); wing, 51–57 (54.1); tail, 41–50 (44.3); exposed culmen, 9–10 (9.2); tarsus, 17.5–19 (18).<sup>2</sup>

<sup>1</sup> Ten specimens, from Atlantic coast district of United States.

<sup>2</sup> Eight specimens, from Atlantic coast district of United States.

The specimens measured from the Atlantic States compare in average measurements with those from the Mississippi Valley and others from the Bahamas; the latter

Eastern United States, breeding north to Massachusetts, southern Ontario (Toronto), southern Michigan, southern Wisconsin (?), etc., south to Florida, Bahamas (islands of Abaco, New Providence, and Green Cay<sup>1</sup>), and probably to the Gulf States in general; occurring irregularly north to northern Michigan (Mackinac Island); west to edge of the Great Plains, in eastern Nebraska, eastern Kansas, etc.; in winter south nearly throughout West Indies (Bahamas, Cuba, Grand Cayman, Cayman Brac, Jamaica, Haiti, Porto Rico, Mona, Culebra, St. Thomas, Tortola, Virgin Gorda, and St. Croix, Greater Antilles; St. Eustatius, St. Christopher, and Martinique, Lesser Antilles), island of Cozumel, Yucatan (January), and Swan Island, Caribbean Sea (1 specimen, February 12); Bermudas (October).

*Sylvia discolor* VIEILLOT, Ois. Am. Sept., ii, 1807, 37, pl. 98 (United States and Greater Antilles); Nouv. Dict. d'Hist. Nat., xi, 1817, 181; Enc. Méth., ii, 1823, 445.—STEPHENS, Shaw's Gen. Zool., x, 1817, 716.—BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 82.—LESSON, Traité d'Orn., 1831, 418.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, "294," i. e. 394.—AUDUBON, Orn. Biog., i, 1831, 76, pl. 14.—BREWER, Journ. Bost. Soc. N. H., i, 1827, 436 (Massachusetts).—LEMBEYE, Aves de la Isla de Cuba, 1850, 32, pl. 6, fig. 2.

*Sylvicola discolor* JARDINE, ed. Wilson's Am. Orn., 1832, 375.—RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List, 1838, 23.—AUDUBON, Synopsis, 1839, 62; Birds Am., oct. ed., ii, 1841, 68, pl. 97.—GOSSE, Birds Jamaica, 1847, 159.—JARDINE, Contr. Orn., 1848, 82 (Bermudas, aut. visit.).—HURDIS, Jardine's Contr. Orn., 1850, 7 (Bermudas, Oct.).—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin).—PRATTEN, Trans. Ills. Agric. Soc., i, 1855, 602 (Illinois).—BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 110 (Bahamas, breeding); xi, 1867, 91 (Santo Domingo), 250 (Porto Rico); Journ. für Orn., 1866, 184 (do.).—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).

[*Sylvicola*] *discolor* BONAPARTE, Consp. Av., i, 1850, 308.

*M[ni]otilta discolor* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *discolor* GRAY, Hand-list, i, 1869, 241, no. 3486.

*Rhimamphus discolor* GUNDLACH, Journ. für Orn., 1855, 474 (Cuba).

*Dendroica discolor* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 290; Cat. N. Am. Birds, 1859, 210; Review Am. Birds, 1865, 213, part (Jamaica; Porto Rico; St. Thomas; St. Croix).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba); 1872, 416 (do.); Repert. Fisico-Nat. Cuba, i, 1865, 235; Anal. Soc. Esp. Hist. Nat., vii, 1878, 186 (Porto Rico).—MARCH, Proc. Ac. Nat. Sci. Phila., xv, 1863, 293 (Jamaica).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 276, pl. 14, fig. 9.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 439 (Massachusetts, Rhode Island, and Connecticut, breeding).—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 564 (Cozumel I., Yucatan, winter); x, 1888, 576 (Swan I., Caribbean Sea); Orn. Illinois, i, 1889, 155.—CORY, Auk, iii, 1886, 39 (West Indian references); vi, 1889, 31 (Little Cayman and Cayman Brac); vii, 1890, 375 (Tortola and Virgin Gorda); viii, 1891, 47 (St. Eustatius), 48 (St. Croix; St. Christopher); ix, 1892, 48, 49 (Maraguna and Watlings I., Bahamas); Birds W. I., 1889, 53; Cat. W. I. Birds, 1892, 118 (Great Bahama, Abaco, Bir-

<sup>1</sup> Perhaps also Rum Cay and other islands of the group. These resident Bahama birds are recognizably different from birds breeding in the United States, as explained on p. 608 (footnote), and may require subspecific separation.

minis, Berry islands, Eleuthera, New Providence, Andros, San Salvador, Exuma Keys, Concepcion, Watlings I., Rum Cay, Green Cay, Maraguna, North Caicos, East Caicos, and Great Inagua, Bahamas; Cuba, Isle of Pines, Jamaica, Haiti, Mona, Porto Rico, Tortola, Virgin Gorda, and St. Croix, Greater Antilles; St. Eustatius and St. Christopher, Lesser Antilles).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 673.—COUES (E. B.), Auk, v, 1888, 405-408 (Washington, District of Columbia; nesting habits, etc.).—COOKE, Bird Migr. Miss. Val., 1888, 255 (e. Kansas; e. Nebraska; West Liberty, Iowa; Pierce City, Missouri).—SCOTT, Auk, vii, 1890, 21 (Tarpon Springs and Punta Rassa, Florida, breeding).—GOSS, Birds Kansas, 1891, 570 (summer resid. in e. Kansas).—NEHRING, Our Native Birds, etc., i, 1893, 236, pl. 13, fig. 2.—(?) WHITE, Auk, x, 1893, 228 (Mackinac I., Michigan, migr.).—L'ILEY and WALLACE, Proc. Ind. Ac. Sci., 1895, 157 (Wabash, Indiana, May 2).—SAMUEL, Auk, xvii, 1900, 391 (Toronto, Ontario, May 11).—AMES, Auk, xviii, 1901, 106 (Toronto, May 11).

*D[endroica] discolor* RIDGWAY, Man. N. Am. Birds, 1887, 516.

*Dendroica discolor* NEWTON (A. and E.), Ibis, 1859, 144 (St. Croix).—SCLATER, Proc. Zool. Soc. Lond., 1861, 71 (Jamaica); Cat. Am. Birds, 1862, 33 (do.).—ALBRECHT, Journ. für Orn., 1862, 194 (Jamaica).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 125 (e. Kansas, common in May).—COUES, Check List, 1873, no. 86; 2d ed., 1882, no. 127; Birds N. W., 1874, 63; Birds Col. Val., 1878, 246.—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 59 (descr. young).—GUNN, Bull. Nutt. Orn. Club, iv, 1879, 186 (Ottawa Co., Michigan, 1 spec., May 21).—CORY, Birds Bahama I., 1880, 64; Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti) Birds Haiti and San Dom., 1885, 31.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 114.—SALVIN and GODMAN, Biol. Centr.-Am., Aves i, 1881, 142 (at sea near Swan I., Caribbean Sea).—AGERSBERG, Auk, ii, 1885, 278 (s. e. Dakota).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 307, 648.—HOWE, Contr. N. Am. Orn., ii, 1902, 20 (Uxbridge, Vermont, 1 spec., "Dec. 4, 1884").

[*Dendroica*] *discolor* COUES, Key N. Am. Birds, 1872, 103. —SCLATER and SALVIN, Notes Am. North. Birds, 1879, 2. —CORY, List Birds W. I., 1885, 8.

passing terminally into pale dull olive-yellow; inner webs of two outermost rectrices with a large terminal or subterminal spot of white; sides of head, including a narrow superciliary stripe (becoming indistinct or obsolete beyond eye), a large crescentic suborbital space, greater part of auricular region, whole malar region, and entire under parts clear lemon yellow, the sides and flanks very indistinctly streaked with olive-greenish (these streaks more distinct on sides of breast); a postocular and a rictal streak of olive-greenish; maxilla brownish black, with paler tomia; mandible horn brownish, paler basally; legs and feet horn brownish (in dried skins); length (skins), 115–119 (117); wing, 55–59 (56.8); tail, 51; exposed culmen, 10.5–11.5 (11); tarsus, 19–21 (19.8).<sup>1</sup>

*Adult female*.—Similar to the adult male and not always distinguishable, but usually (?) slightly duller in color; length, 105–115 (110.5); wing, 53–56 (54.5); tail, 47–49 (47.4); exposed culmen, 11–12 (11.2); tarsus, 19–20 (19.5).<sup>2</sup>

*Young, first plumage*.—Above plain light grayish brown, somewhat darker on back; middle and greater wing coverts edged with lighter brownish and indistinctly tipped with dull light buffy; remiges and rectrices dusky, edged with light olive, these edgings on tertials broader and paler; lower parts entirely dull whitish, faintly tinged with yellow posteriorly, strongly tinged with grayish brown on sides of breast. (Described from No. 111,258, coll. U. S. Nat. Mus., Swan Island, Caribbean Sea, February 3, 1887; C. H. Townsend.)

[Some apparently adult specimens, of both sexes, possibly younger birds, are duller in color than those from which the above descriptions of the adult male and female are taken, while several which are otherwise as bright colored have the olive-green of the upper parts, especially on the hindneck and part of the pileum, replaced by clear ash gray, and the yellow of the throat by a much paler tint, almost yellowish white.

Having only one specimen, an adult female, from the island of Grand Cayman (the type locality) for comparison with the Swan Island series, I can not be sure that the birds of the two islands are really identical.]

#### Islands of Grand Cayman and Swan Island, Caribbean Sea.

*Dendroica vitellina* CORY, Auk, iii, Oct., 1886, 497, 501 (Grand Cayman, Caribbean Sea; coll. C. B. Cory); iv, 1887, 181 (St. Andrews I., Caribbean Sea); v, 1888, 157 (Grand Cayman); vi, 1889, 31 (Little Cayman; Cayman Brac); Birds W. I., 1889, 286; Cat. W. I. Birds, 1892, 18, 119, 129, 155 (Grand Cayman).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 574 (Grand Cayman), 576 (Swan I., Caribbean Sea; descr. young).

<sup>1</sup> Five specimens, from Swan Island, Caribbean Sea.


<sup>2</sup> Four specimens, from Swan Island, Caribbean Sea. A single female from Grand Cayman (the type locality) measures: Length (skin), 112; wing, 52; tail, 45; exposed culmen, 12; tarsus, 20.

## DENDROICA PALMARUM PALMARUM (Gmelin).

## PALE WABBLER.

Wings dusky with light grayish brown or brownish gray edgings, but without any distinct bands; a yellow or whitish superciliary stripe; under parts with at least the under tail-coverts yellow; spring and summer adults with a chestnut pileum.

*Adults (except alibi<sup>1</sup>) in spring and summer.*—Forehead and crown uniform bright chestnut, the former sometimes blackish anteriorly, where divided by a short and narrow median line of whitish or pale yellowish; rest of upper parts grayish olive or hair brown, narrowly and indistinctly streaked with darker, especially on back and scapulars; lower rump and upper tail-coverts light yellowish olive or olive-greenish, the larger coverts more brownish, with indistinct mesial streaks of darker; wings and tails dusky with light grayish brown or brownish gray edgings, these most distinct on the terminal portion of middle and greater wing-coverts; inner web of two outermost rectrices with a large terminal spot of white, the third sometimes with a small terminal spot of the same; a narrow superciliary stripe of pale yellow; a triangular spot of dusky at anterior angle of eye, and a similar but smaller postocular spot; auricular region grayish brown, sometimes finely streaked anteriorly with dull brownish white; an indistinct sub-orbital space of dull brownish white; malar region dull whitish, sometimes tinged with yellow; chin, throat, chest, and under tail-coverts canary yellow, the intervening under parts (breast and abdomen) dull whitish, usually more or less tinged with yellow; chest (at least laterally) streaked with brown or chestnut, the sides and flanks less distinctly streaked; sometimes a series of brown or chestnut streaks





*Adult female*.—Length (skins), 114.3–123.2 (117.6); wing, 59.9–62.7 (60.7); tail, 47.7–51.6 (49); exposed culmen, 9.6–10.2 (10); tarsus, 19–19.8 (19.6); middle toe, 11.4–12.7 (11.9).<sup>1</sup>

Eastern North America, chiefly west of the Alleghenies; breeding in the interior of British America (Fort Resolution and Fort Simpson, province of Mackenzie); in winter, southern Florida, Bahamas, Greater Antilles (Cuba, Grand Cayman, Little Cayman, Cayman Brac, Jamaica, Haiti, Porto Rico), Cozumel Island, Yucatan (Progreso) and Swan Island, and island of Old Providence, Caribbean Sea; occasional, during migration, in Atlantic States (numerous records), and at eastern base of Rocky Mountains (Denver, Colorado, one specimen, June 20).

[*Motacilla*] *palmarum* GMELIN, Syst. Nat., i, pt. ii, 1788, 951 (Santo Domingo; based on *Le Bimbele ou fausse Linotte* Buffon, Hist. Nat. Ois., v. 330, and *Palm Warbler* Latham, Gen. Synop., ii, pt. 2, 498).

*Motacilla palmarum* LESSON, Traité d'Orn., 1831, 418.

[*Sylvia*] *palmarum* LATHAM, Index Orn., ii, 1790, 544.

*Sylvia palmarum* VIEILLLOT, Ois. Am. Sept., ii, 1807, 21, pl. 73; Nouv. Dict. d'Hist. Nat., xi, 1817, 168; Enc. Méth., ii, 1823, 431.—STEPHENS, Shaw's Gen. Zool., x, 1817, 607.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1825, 29 (Florida); Ann. Lyc. N. Y., ii, 1826, 78; Am. Orn., ii, 1828, 12, pl. 10, fig. 2.—D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 61, pl. 8.

*Sylvicola palmarum* JARDINE, ed. Wilson's Am. Orn., i, 1832, 373.—RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—SALLÉ, Proc. Zool. Soc. Lond., 1857, 231 (Santo Domingo).—BRYANT, Proc. Bost. Soc. N. H., vii, 1859, 110 (Bahamas, winter; habits); xi, 1867, 91 (Santo Domingo).—ALBRECHT, Journ., für Orn., 1861, 53 (Bahamas).

*M[niotilta]* *palmarum* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *palmarum* GRAY, Hand-list, i, 1869, 240, no. 3477.

*Dendroica palmarum* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 288, part (Ohio, Illinois, Wisconsin, Red R. Settlement, and Florida); Cat. N. Am. Birds, 1859, no. 208, part; Review Am. Birds, 1865, 207, part (Fort Simpson; Fort Resolution; Cuba).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba); 1872, 415 (do.); Repert. Físico-Nat. Cuba, i, 1865, 234; Anal. Soc. Esp. Hist. Nat., vii, 1878, 183 (Porto Rico).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 273, part.—RIDGWAY, Proc. U. S. Nat. Mus., viii, 1885, 564 (Cozumel I., Yucatan); x, 1888, 575 (Swan I., Caribbean Sea); Orn. Illinois, i, 1889, 154.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 672.—ALLEN, Bull. Am. Mus. N. H., i, 1886, 258 (Massachusetts records; 4 specs).—CORY, Auk. iii, 1886, 39 (West Indian references); iv, 1887, 180 (Old Providence I., Caribbean Sea); vi, 1889, 31 (Little Cayman and Cayman Brac); ix, 1892, 49 (Watlings I., Bahamas); Birds W. I., 1889, 53; Cat. W. I. Birds, 1892, 118 (Great Bahama, Abaco, Biminis, Berry Islands., Eleuthera, New Providence, Andros, San Salvador, Exuma Keys, Concepcion, Watlings I., Rum Cay, Fortune I., Green Cay, North Caicos, Grand Caicos, East Caicos, and Great Inagua, Bahamas; Cuba; Isle of Pines; Grand Cayman; Jamaica; Haiti; Porto Rico).—COOKE, Bird Migr. Miss. Val., 1888, 254 (Mississippi Valley dates, etc.); Bull. 44, Colo. Agr. Coll., 1898, 168 (Denver, Colorado, 1 spec., June 20, 1891).—DUTCHER, Auk., v, 1888, 182 (Fire I., New York, Sept. 23, 1 spec.).—DWIGHT, Auk. v, 1888, 324 (Montauk Point,

<sup>1</sup> Eight specimens.

Long Island, Sept. 7, 1 spec.).—THOMSON, Proc. U. S. Nat. Mus., xiii, 1890, 620 (Manitoba, migrant).—STRONG, Proc. Ac. Nat. Sci. Phila., 1890, 211 (Progreso, Yucatan).—SCOTT, Auk, vii, 1890, 20 (Punta Rassa and Key West, Florida, winter; Tarpon Springs, Sept. 22, to April 18), 314 (Garden Key, Tortugas).—MILLER, Auk, vii, 1890, 229 (Cape Cod, Massachusetts, Sept. 23 and 24, 2 spec.).—CLARK, Auk, vii, 1890, 322 (Fort Churchill, Hudson Bay).—GOSS, Birds Kansas, 1891, 568 (whole State, during migrations).—LOOMIS, Auk, viii, 1891, 171 (Chester Co., South Carolina, in migration).—MORRIS, Auk, ii, 1894, 181 (Windsor, Connecticut, Sept. 4, 1 spec.).—OBERHOLSER, Auk, xii, 1895, 185 (Redbank, New Jersey, Sept. 18.).—NEHRLING, Our Native Birds, etc., i, 1896, 233, part.—CHAPMAN, Auk, xiii, 1896, 343 (New York City, 1 spec., Sept. 2).—POMSON, Auk, xvi, 1899, 195 (Holly, Orleans Co., New York, 1 spec., May 12).

*D[endroica] palmarum* RIDGWAY, Man. N. Am. Birds, 1887, 517.

*Dendroica palmarum* SCLATER, Proc. Zool. Soc. Lond., 1861, 71 (Jamaica).—ALBRECHT, Journ. für Orn., 1862, 193 (Jamaica).—BLAKISTON, Ibis, 1863, 63 (interior British America).—MCLWRAITH, Proc. Essex Inst., v, 1866, 86 (Hamilton, Ontario).—COUES, Check List, 1873, no. 90, part; 2d ed., 1882, no. 132; Birds N. W., 1874, 67, part; Birds Col. Val., 1878, 249, part.—CORY, Birds Bahama I., 1880, 68; Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti); Birds Haiti and San Dom., 1885, 32.—RIDGWAY, Man. N. Am. Birds, 1881, no. 113.—SEELMAN, Bull. Nutt. Orn. Club, vii, 1882, 54 (Brookline, Massachusetts, Oct., 1 spec.).—BOYCARD, Proc. Zool. Soc. Lond., 1883, 441 (Progreso, Yucatan).—FISHER, Bull. Nutt. Orn. Club, vii, 1882, 249 (Sing Sing, New York, Apr. 29, 1 spec.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 317, 650, part.

*Dendroica palmarum* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 616, part (monogr.).

[*Dendroica*] *palmarum* COUES, Key N. Am. Birds, 1872, 104, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.

*D[endroica] palmarum* NEWTON (A. and E.), Handb. Jamaica, 1861, 106.—COUES, Key N. Am. Birds, 2d ed., 1884, 307.

*Dendroica palmarum*. Subspecies *palmarum* RIDGWAY, Bull. Nutt. Orn. Club, i, Nov., 1876, 84 (crit.).

[*Dendroica palmarum*].—COUES, Birds Col. Val., 1878, 249, part.

(?) *Dendroica ignota* MAYNARD, Contributions to Science, i, Apr., 1889, 30, pl. 3, fig. 1 (Homestead, St. Andrews, Jamaica, Apr. 4, 1879; coll. Kingston, Jamaica, Museum).

(?) *Dendroica ignota* CORY, Cat. W. I. Birds, 1892, 123 (crit.).

### DENDROICA PALMARUM HYPOCHRYSEA Ridgway.

#### YELLOW PALM WARBLER.

Similar to *D. p. palmarum*, but decidedly larger, and with the under parts entirely yellow, even in winter and immature plumages; sides of chest more often streaked with chestnut, the streaks broader; color of back, etc., more olive, often inclining to olive-green.

*Young (first plumage).*—Above grayish brown, the pileum streaked with dusky, the back and scapulars with T-shaped markings of the same; lower rump and upper tail-coverts russet; wings and tail as in adults, but tertials passing into russet along edges, the middle and greater wing-coverts with small terminal spots of pale russet or rusty buff; under parts whitish, tinged with yellow, everywhere, except on chin, abdomen and under tail-coverts (the latter entirely yellow) heavily streaked with dusky.

*Adult male.*—Length (skins), 118.1–124.5 (122.2); wing, 64.3–70.6 (67.1); tail, 51.8–56.9 (54.6); exposed culmen, 9.6–10.2 (9.9); tarsus, 19.3–20.6 (20.1); middle toe, 11.9–12.9 (12.4).<sup>1</sup>

*Adult female.*—Length (skins), 114.3–119.4 (116.6); wing, 62–65.8 (64.1); tail, 51.3–53.1 (52.3); exposed culmen, 9.6–10.2 (9.9); tarsus, 19.3–20.3 (19.6); middle toe, 11.9–12.4 (12.2).<sup>2</sup>

Atlantic coast district of United States and British Provinces; breeding from eastern Maine (vicinity of Calais), New Brunswick, and Nova Scotia northward, probably to Newfoundland, southern Labrador, and province of Quebec;<sup>3</sup> in winter, North Carolina (?), South Carolina (?), northern and western Florida (Tarpon Springs, Punta Rassa, etc.), Key West, Tortugas (Garden Key, March), and along Gulf coast to Louisiana; accidental in Cuba and Jamaica (Kingston, 1 specimen, December 20, 1890) and in northern Ohio (Oberlin, 1 specimen, April 16, 1892). Occasional in Bermudas in winter?<sup>4</sup>

*Sylvia petechia* (not *Motacilla petechia* Linnæus) VIEILLIOT, Ois. Am. Sept., ii, 1807, 32, part (Pennsylvania).—WILSON, Am. Orn., vi, 1812, 19, pl. 28, fig. 4.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 198; Ann. Lyc. N. Y., ii, 1826, 83.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 364.—AUDUBON, Orn. Biog., ii, 1834, 259, 360, pls. 163, 164.—PEABODY, Rep. Orn. Mass., 1839, 307.—McCULLOCH, Journ. Bost. Soc. N. H., iv, 1844, 406 (habits).—THOMPSON, Nat. Hist. Vermont, 1853, 80.

*Sylvicola petechia* AUDUBON, Synopsis, 1839, 58, part; Birds Am., oct. ed., ii, 1841, 55, pl. 90.—(?) JARDINE, Contr. Orn., 1848, 82 (Bermudas, Dec. 17, 1847).—

<sup>1</sup> Nine specimens.

<sup>2</sup> Eight specimens.

<sup>3</sup> I can find no record of its breeding in Newfoundland, Labrador, or Quebec, but the species has been recorded from the first and last mentioned. (See synonymy)

<sup>4</sup> Possibly the Bermuda records pertain to *D. p. palmarum*.



*Dendroica palmarum hypochrysea* AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 672a.—SCOTT, Auk, vii, 1890, 20 (Tarpon Springs, Punta Rassa, and Key West, Florida, rare in late Mar. and early Apr.), 314 (Garden Key, Tortugas, Mar. 22 and 31, 2 specs.); x, 1893, 341 (Kingston, Jamaica, 1 spec., Dec. 20, 1890).—ALLEN (F. H.), Auk, viii, 1891, 165 (Cape Breton, Nova Scotia).—WINTLE, Auk, viii, 1891, 396 (Montreal, Canada, 1 spec., May 7, 1891).—McCORMICK, Auk, ix, 1892, 397 (Oberlin, Ohio, 1 spec., Apr. 16, 1892).—CORY, Cat. W. I. Birds, 1892, 118, 155 (Cuba, Jan., Feb.).—PORTER, Auk, xvii, 1900, 72 (Newfoundland, abundant Sept. 8 and after).  
*D[endroica] palmarum hypochrysea* RIDGWAY, Man. N. Am. Birds, 1887, 517.

DENDROICA PLUMBEA Lawrence.

PLUMBEOUS WARBLER.

*Adults (sexes alike).*—Above uniform slate color, relieved by a narrow superciliary line of white and two white wing-bars, produced by tips of middle and greater coverts; inner webs of two or three outermost rectrices with a small terminal space of white, occupying on the outermost not more than inner half of the web, on the others much less; sides of head, sides of neck, and thence backward to and including flanks plain slate-gray, the first relieved by a white suborbital spot; median under parts grayish white, the feathers gray beneath surface; maxilla dark brown, mandible much paler; legs and feet horn brownish (in dried skins).

*Immature (both sexes).*—With exactly the same pattern of coloration as adults, but with the slate color of upper parts replaced by deep olive, the slate-gray of sides, etc., by lighter, more greenish, olive, and the white of head markings and median under parts by pale olive-yellow.

*Adult male.*—Length (skins), 120–127 (124.5)<sup>1</sup>; wing, 58–66 (61.9); tail, 50–59 (54.1); exposed culmen, 11; tarsus, 20–21 (20.3); middle toe, 11–12 (11.3).<sup>2</sup>

*Adult female.*—Wing, 56–61 (57.9); tail, 50–54 (51.4); exposed culmen, 11–12 (11.1); tarsus, 19–21 (20.6); middle toe, 10–12 (11.1).<sup>3</sup>

Islands of Dominica and Guadeloupe, Lesser Antilles.<sup>4</sup>

<sup>1</sup> Four specimens.                      <sup>2</sup> Ten specimens.                      <sup>3</sup> Seven specimens.  
<sup>4</sup> Specimens from Guadeloupe have, as a rule, decidedly shorter wings and tail than those from Dominica, but I am not able to discover any difference in coloration. Average measurements are as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
MALES.					
Four adult males from Dominica .....	64	56	11	20.7	11.7
Six adult males from Guadeloupe .....	60.5	52.7	11	20	11
FEMALES.					
Four adult females from Dominica .....	58.7	52.2	11	21	
Three adult females from Guadeloupe .....	58.6	50.3	11.3	20	

*Dendroica plumbea* LAWRENCE, ANN. N. Y. Acad. Sci., i, Oct. 1, 1878, 47 (Dominica, Lesser Antilles; coll. U. S. Nat. Mus.); Proc. U. S. Nat. Mus., i, 1878-79, 55 (Dominica), 454 (Guadeloupe), 486.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 333, 651 (Dominica; Guadeloupe).—SCLATER, Proc. Zool. Soc. Lond., 1889, 326 (Dominica).

[*Dendroica*] *plumbea* CORY, List Birds W. I., 1885, 8.

*Dendroica plumbea* CORY, Ank., iii, 1886, 40; viii, 1891, 49 (Guadeloupe); Birds W. I., 1889, 54; Cat. W. I. Birds, 1892, 18, 119.

#### DENDROICA PHARETRA (Gosse).

##### STREAKED WARBLER.

*Adults (sexes alike).*—Pileum and back streaked with black and white, the black streaks much broader on the back, the white streaks slightly tinged with olive; scapulars gray with broad mesial streaks of black; hindneck light olive-gray narrowly streaked in black; rump and upper tail-coverts plain grayish olive; wings dusky or dull black with light olive-gray edgings (these broader and more olive on tertials), the middle coverts and outer webs of greater coverts broadly margined on tip with white, forming two narrow bands across wing; tail dusky, the outer webs of rectrices broadly edged with olive, the inner webs of the two or three outermost broadly edged terminally with white; under parts white, the throat flecked or streaked, the chest, breast, upper abdomen, sides, and flanks marked with triangular (cuneate or sagittate) streaks of black; under tail-coverts pale brownish buff, with a large central (mostly concealed) sagittate spot of pale olive; under wing-coverts and axillars immaculate white; maxilla black, with pale horn-colored tomia; mandible grayish horn color (in dried skins); legs and feet horn color (in dried skins).

*Immature (both sexes).*—Above plain greenish olive, tinged with russet



## Island of Jamaica, Greater Antilles.

*Sylvicola pharetra* GOSSE, Birds Jamaica, 1847, 163; Illustr. Birds Jam., 1849 pl. 38.—BONAPARTE, Consp. Av., i, 1850, 309.—OSBURN, Zoologist, xvii, 1859, 6660, in text (habits).

*M[niotilta] pharetra* GRAY, Gen. Birds, i, 1848, 196.

[*Mniotilta*] *pharetra* GRAY, Hand-list, i, 1869, 241, no. 3487.

*Dendroica pharetra* SCLATER, Proc. Zool. Soc. Lond., 1861, 71; Cat. Am. Birds, 1862, 358.—ALBRECHT, Journ. für Orn., 1862, 193.—COUES, Birds Col. Val., 1878, 296 (synonymy).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 332, 651.

[*Dendroica*] *pharetra* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.—COUES, Key N. Am. Birds, 2d ed., 1884, 297, in text.—CORY, List Birds W. I., 1885, 8.

*D[endræca] pharetra* NEWTON (A. and E.), Handb. Jamaica, 1881, 106.

*Dendroeca pharetra* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 617 (monogr.).

*Dendroica pharetra* BAIRD, Review Am. Birds, 1865, 192.—CORY, Auk, iii, 1886, 35; Birds W. I., 1889 49, Cat. W. I. Birds, 1892, 18, 118, 130 (Jamaica).

*D[endroica] pharetra* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 220.

## Genus CATHAROPEZA Sclater.

*Catharopeza*<sup>1</sup> SCLATER, Ibis, 4th ser., iv, Jan., 1880, 40, footnote; 74, in text. (Type, *Leucopeza bishopi* Lawrence.)

Rather large terrestrial or semiterrestrial Mniotiltidæ with the outermost (ninth) primary shorter than fifth; tail much less than two and a half times as long as tarsus; color plain sooty blackish,<sup>2</sup> with white patch on lower throat, another on breast, and under tail-coverts white.

Bill much shorter than head, shaped much as in *Oporornis* and species of *Dendroica*. Rictal bristles distinct. Wing moderate, rather pointed (eighth, seventh, and sixth primaries longest, ninth slightly shorter than fifth); wing-tip about as long as commissure. Tail about equal to distance from bend of wing to tips of secondaries, rounded, the rectrices narrow and with subacuminate tips. Tarsus nearly half as long as tail, its scutella indistinct (almost fused on outer side); middle toe with claw much shorter than tarsus; basal phalanx of middle toe united for decidedly more than half its length to outer toe, separated for most of its length from inner toe.

*Coloration*.—Sooty blackish, or olive, with orbital ring, lower throat, patch on breast, under tail-coverts, and small spot at tip of inner web of lateral rectrices, white; sexes essentially alike.

*Nidification*.—Unknown.

*Range*.—Island of St. Vincent, Lesser Antilles. (Monotypic.)

This genus is very distinct from *Leucopeza*, the form of the bill, feet, wings, and tail being conspicuously different. It is nearly related to *Dendroica*, from which it differs chiefly in the relatively shorter tail, and perhaps should not be separated from that genus.

<sup>1</sup> “καθαρός, clarus, et πῆζα, pes.”

<sup>2</sup> Olive, instead of blackish, in young.

## CATHAROPEZA BISHOPI (Lawrence).

## BISHOP'S WARBLER.

*Adult male*.—Pileum, sides of head, hindneck, and rest of upper parts black, becoming gradually less intense posteriorly, the rump, tail, etc., being slate-black; a broad orbital ring of white; a supraloral spot or streak of grayish white; malar apex, chin, and lower throat white, or grayish white, the feathers slate color or slate-gray beneath the surface; feathers on median line of upper throat tipped with white; chest dusky slate or slate-blackish; sides and flanks brownish slate-gray or mouse gray, separated from the darker broad chest-band by a narrow band of white; median portion of breast and abdomen white, the feathers slate-gray beneath the surface; under tail-coverts with basal half slate-gray, terminal half white; under wing-coverts plain slate-gray; inner webs of three outermost rectrices with a small terminal triangular spot of white, largest on the exterior rectrix; bill black; legs and feet pale yellowish brown (flesh color in life?); length (skin), 137.2; wing, 70.1; tail, 53.8; exposed culmen, 13.2; tarsus, 23.1.<sup>2</sup>

*Adult female*.—Scarcely distinguishable from the adult male, but upper parts of body, wings, and tail more sooty (nearly deep clove brown), and terminal spots of under tail-coverts tinged with brownish buff; length (skin), 148.6; wing, 66.8; tail, 52.6; exposed culmen, 12.7; tarsus, 22.6.<sup>2</sup>

*Immature (sexes alike)*.—Above plain deep olive, the remiges and rectrices more dusky, inclining to clove brown; a lighter supraloral spot; two lateral rectrices with small terminal white spots, as in adults; an incomplete whitish orbital ring; sides of throat olive, the median portion of throat mixed olive and whitish; lower throat buff.



## Genus OPORORNIS Baird.

*Oporornis* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 246. (Type, *Sylvia agilis* Wilson.)

Medium-sized or rather small terrestrial Mniotiltidæ with the tail not more than two and a half times as long as tarsus, the inner webs of the rectrices without white or yellow, and the under parts of the body (sometimes throat also) yellow, the under parts without streaks.

Bill much shorter than head, shaped quite as in *Dendroica*, the subterminal notch of maxillary tomium similarly developed. Nostrils as in *Dendroica*. Rictal bristles weak, sometimes almost obsolete. Wing long, pointed (three to four outermost primaries abruptly longest, the ninth equal to or longer than sixth, sometimes equal to seventh); wing-tip shorter than tarsus (nearly as long in *O. agilis*). Tail much shorter than wing (shorter than distance from bend of wing to tips of secondaries in *O. agilis* and *O. formosa*, longer in *O. philadelphia* and *O. tolmiei*), slightly rounded (more decidedly so in *O. philadelphia* and *O. tolmiei*), the rectrices narrowing terminally, with tips subacuminate. Tarsus nearly one-third as long as wing (more than one-third as long in *O. tolmiei*), its scutella indistinct (obsolete or more or less fused on outer side); middle toe, with claw, much shorter than tarsus; basal phalanx of middle toe united for more than half (sometimes most of) its length to outer toe, for not more (usually less) than half its length to inner toe.

*Coloration*.—Above plain olive-green, becoming more or less gray on pileum and hindneck in adults, or else with black on forehead and crown; beneath plain yellow with throat and chest gray or gray and black, or if throat also yellow a black patch on sides of head.

*Nidification*.—Terrestrial.

*Range*.—Temperate North America, chiefly eastern; in winter south through Mexico and Central America to Colombia. (Four species.)

The two smaller species, *O. philadelphia* and *O. tolmiei*, have usually been placed in *Geothlypis*, but I am convinced that they are decidedly more nearly related to the type species of *Oporornis* (*O. agilis*), their relationship to which is not only indicated by the close similarity of their coloration, but also by their structure. It is true they have relatively shorter wings and longer and more rounded tails than *O. agilis*; but nevertheless they have the same pointed wing, with the outermost (ninth) primary even longer (almost, sometimes quite, the longest), whereas all the species of *Geothlypis* have the ninth primary shorter than the fifth (often shorter than the fourth, sometimes even shorter than the first), while in all the latter the wing-tip is shorter than the exposed culmen, instead of much longer.

*O. formosa*, besides differing conspicuously in the pattern of coloration of the head, neck, and chest, has the anterior toes more united

basally, the basal phalanx of the middle toe, being joined for most of its length to the outer toe and for about half its length to the inner toe, while in all the others the fusion extends for much less than the entire length of the phalanx on the outer and for less than half its length on the inner side.

KEY TO THE SPECIES OF *OPORORNIS*.

- a. Tail not longer than distance from bend of wing to tips of secondaries, nearly even; outermost (ninth) primary not longer than sixth; bill more slender.
  - b. Throat and chest yellow, top and sides of head with more or less of black, and with a yellow line extending from nostril to above, behind, and beneath eye. (Eastern United States; south in winter to Cuba and through Mexico and Central America to Colombia.) ..... *Oporornis formosa* (p. 622)
  - bb. Throat and chest not yellow; top and sides of head without any black; no yellow on sides of head; a whitish orbital ring. (Eastern United States and more southern British provinces; Bahamas and northern South America in winter.) (*Oporornis agilis*.)
    - c. Chin, throat, and chest gray, darker on chest.
      - Oporornis agilis*, adult male (p. 625)
      - cc. Chin and throat pale brownish or brownish white; chest deeper brownish.
        - Oporornis agilis*, adult female and immature birds (p. 626)
  - aa. Tail longer than distance from bend of wing to tips of secondaries, decidedly rounded; outermost (ninth) primary longer than sixth; bill stouter.
    - b. Head and neck slate-gray, with more or less of black on throat and chest. (Adult males.)
      - c. No white on eyelids; more black on chest, but less on lores. (Eastern North America; south in winter through Central America to Colombia.)
        - Oporornis philadelphia*, adult male (p. 628)
      - cc. A white mark on each eyelid; less black on chest, but more on lores. (Western North America; south in winter through Mexico and Central America to Colombia.) ..... *Oporornis tolmiei*, adult male (p. 631)
    - bb. Chin and throat pale gray, grayish white, or pale yellowish, without any black; lores grayish. (Adult females and immature birds.)

most primary white; a superciliary stripe of lemon yellow, extending from nostrils to just behind the eye, where curving downward and including the posterior half, or more, of lower eyelid; lores, suborbital region (except the yellow on under eyelid), and greater part of auricular region uniform black, this black extended more or less along edge of lower throat and forming a triangular patch; terminal portion of auricular region olive-green; under parts clear lemon yellow, changing on sides and flanks to olive-green; bill dark brownish, the maxilla sometimes nearly black, the mandible paler basally on under side; iris brown; legs and feet pale yellowish brown or brownish yellow in dried skins, pale flesh color in life; length (skins), 121.9–130.8 (126.7); wing, 65–74.7 (70.1); tail, 49–52.3 (51); exposed culmen, 11.4–12.7 (11.9); tarsus, 20.8–23.4 (22.3); middle toe, 13.2–14.7 (14).<sup>1</sup>

*Adult female*.—Similar to the adult male and not always distinguishable, but usually with the gray tips to feathers of crown broader (even those of the forehead being thus marked) and more brownish gray, and the black patch on sides of head more restricted and less sharply defined; in some (probably younger) specimens the black of the pileum is entirely concealed, and still more rarely there is no black, the whole pileum being uniform brownish gray; length (skins), 116.8–123.9 (119.4); wing, 62.7–66.8 (65); tail, 45.5–49.8 (47.2); exposed culmen, 11.2–13 (11.7); tarsus, 20.6–22.9 (21.8); middle toe, 12.7–14.2 (13.5).<sup>2</sup>

*Young, first plumage*.—Above uniform light sepia brown; wings and tail as in adults, but lesser and middle coverts brown, like back, etc., and greater coverts tipped with light brown or strongly tinged with that color; lores dusky; sides of head otherwise similar in color to upper parts, but rather paler, fading gradually into pale buffy brown or brownish buff on chin and throat, this gradually deepening into light broccoli brown on chest, sides, and flanks; abdomen and under tail-coverts pale buffy yellow.

Eastern United States; breeding from Alabama, Louisiana, and Texas (Harris, Montgomery, Navarro, and Bexar counties) north to southeastern New York (Sing Sing), New Jersey, eastern Pennsylvania (Chester and Delaware counties), western Pennsylvania (Beaver County), Ohio, southern Michigan, southern Wisconsin, Iowa (Burlington), and eastern Nebraska (Omaha; Peru), west to border of Great Plains (Texas to Nebraska); occurring north (but not breeding?) to southern Connecticut (Suffield; Lyme) and Long Island; south in winter to Cuba (accidental), Florida Keys (occasional), and through southern Mexico (Playa Vicente, Oaxaca; Guichicovi, Chiapas), and Central America to northern Colombia (province of Santa Marta).

<sup>1</sup> Eight specimens.

<sup>2</sup> Seven specimens.

- Sylvia formosa* WILSON, Am. Orn., iii, 1811, 85, pl. 25, fig. 3 (Kentucky).—STEPHENS, Shaw's Gen. Zool., x, 1817, 683.—VIEILLIOT, Enc. Méth., ii, 1823, 450.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 197; Ann. Lyc. N. Y., ii, 1828, 84.—AUDUBON, Orn. Biog., i, 1831, 196, pl. 38.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 399.
- Sylvicola formosa* JARDINE, ed. Wilson's Am. Orn., i, 1832, 373.—RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List, 1838, 23.—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 311 (Wisconsin).
- S[ylvicola] formosa* MAXIMILIAN, Journ. für Orn., 1858, 113 (lower Missouri R.).
- M[niotilta] formosa* GRAY, Gen. Birds, i, 1848, 196.
- Myiodiastes formosus* AUDUBON, Synopsis, 1839, 50; Birds Am., oct. ed., ii, 1841, 19, pl. 74.—LEMBEYK, Aves de la Isla de Cuba, 1850, 37.—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba).
- [Myiodiastes] formosus* BONAPARTE, Consp. Av., i, 1850, 315.
- Myiodiastes formosus* PRATTEN, Trans. Ill. Agric. Soc., 1855, 601.
- Sylvania formosa* WOODHOUSE, Rep. Sitgreaves' Expl. Zuffi and Col. R., 1853, 70 (Indian Territory and Texas).
- Myioctonus formosus* GUNDLACH, Journ. für Orn., 1855, 472 (Cuba).
- Trichas (Sylvicola) formosa* HOY, Ann. Rep. Smithsonian Inst. for 1864 (1865), 438 (Missouri).
- Setophaga formosa* BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307 (Cuba).
- Oporornis formosus* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 247; Cat. N. Am. Birds, 1859, no. 175; Review Am. Birds, 1865, 218 (Choctum, Guatemala, etc.).—WHEATON, Ohio Agric. Rep. for 1860 (1861), 363 (Ohio).—BARNARD, Ann. Rep. Smithsonian Inst. for 1860 (1861), 435 (Pennsylvania).—COCKS and PRENTISS, Ann. Rep. Smithsonian Inst. for 1861 (1862), 406 (District of Columbia, breeding).—LAWRENCE, Ann. Lyc. N. Y., vii, 1862, 468 (Lion Hill, Panama R. R.); viii, 1866, 284 (vicinity of New York City); ix, 1868, 94 (Dota, Costa Rica); Bull. U. S. Nat. Mus., no. 4, 1876, 16 (Guichicovi, Chiapas).—SCLATER, Cat. Am. Birds, 1862, 28 (Pennsylvania).—DRESSER, Ibis, 1865, 477 (Texas).—GUNDLACH, Repert. Fisico-Nat. Cuba, i, 1865, 236; Journ. für Orn., 1872, 417; Orn. Cuba, 1873, 68.—SALVIN, Proc. Zool. Soc.

*Oporornis formosa* SCLATER and SALVIN, Ibis, 1859, 10 (Guatemala); Proc. Zool. Soc. Lond., 1864, 347 (Lion Hill, Panama R. R.).—SCLATER, Proc. Zool. Soc. Lond., 1862, 19 (Playa Vicente, Oaxaca).—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Chiriqui; Santa Fé, Veragua).—COUES, Proc. Essex Inst., v, 1868, 269 (occurrence in s. New England probable); Birds Col. Val., 1878, 309, footnote (synonymy); Check List, 2d ed., 1882, no. 140.—RIDGWAY, Bull. Nutt. Orn. Club, iii, 1878, 60 (descr. young); Nom. N. Am. Birds, 1881, no. 119.—LANGDON, Bull. Nutt. Orn. Club, iv, 1879, 236 (Hamilton Co., Ohio, breeding; descr. nest and eggs).—RHODES, Bull. Nutt. Orn. Club, iv, 1879, 234 (Chester and Delaware counties, Pennsylvania, breeding).—OGILBY, Sci. Proc. Roy. Dubl. Soc., iii, 1882, (21) (Navarro Co., Texas, breeding).—SALVIN and GOODMAN, Biol. Centr.-Am., Aves, i, 1881, 148 (Dueñas, Calderas, Coban, and Choctum, Guatemala; Chepo, Isthmus of Panama; etc.).—NEHR-LING, Bull. Nutt. Orn. Club, vii, 1882, 10 (Harris and Montgomery counties, s. e. Texas, breeding).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 348, 653.—HANCOCK, Auk, v, 1888, 210 (near Grand Crossing and Plano, n. e. Illinois, May 23).—CHERRIE, Auk, ix, 1892, 21 (San José, Costa Rica, 1 spec., Oct. 7); Expl. Zool. Costa Rica, i, Aves, 1893, 14 (Boruca, Costa Rica, Oct. 7).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 62 (Volcan de Chiriqui, Feb. 22 to Mar. 3).

*O[porornis] formosa* COUES, Key N. Am. Birds, 2d ed., 1884, 310.

*S[ciurus] formosus* RIDGWAY, Ann. Lyc. N. Y., x, Jan., 1874, 369 (Illinois).

*Geothlypis formosa* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1888, 354; Orn. Illinois, i, 1889, 166.—CORY, Auk, iii, 1886, 43 (Cuban records); Birds W. I., 1889, 57; Cat. W. I. Birds, 1892, 119 (Cuba).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 677.—BUTLER, Bull. Brooklyn Soc. N. H., no. 2, 1886, 36 (Franklin Co., Indiana, summer resid.); Proc. Ind. Ac. Sci. for 1891, 166 (Gibson Station, n. w. Indiana, May, several).—COOKE, Bird Migr. Miss. Val., 1888, 257 (Gainesville and Bonham, Texas; Manhattan, Kansas; Burlington, Iowa, etc.).—DUTCHER, Auk, v, 1888, 139 (Raynor South, Long Island, May 18; Fire I. Light, Aug. 19); x, 1893, 277 (Flatlands, Long Island, 1 spec.).—CHAPMAN, Auk, vi, 1889, 304 (Englewood, New Jersey, breeding).—SCOTT, Auk, vii, 1890, 21 (Tarpon Springs, Florida, 1 spec., Apr. 6), 314 (Garden Key, Tortugas, 1 spec., Mar. 29).—CHERRIE, Auk, vii, 1890, 336 (San José, Costa Rica).—GOSS, Hist. Birds Kansas, 1891, 578 (e. Kansas, summer resid.).—TODD, Auk, viii, 1891, 398 (Beaver Co., Pennsylvania, breeding).—ATTWATER, Auk, ix, 1892, 342 (San Antonio, Texas, breeding).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484 (Rio Escondido, Nicaragua, after Sept. 22).—NEHRING, Our Native Birds, etc., i, 1893, 248, pl. 14, fig. 3.—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 144 (Santa Marta, Colombia).—ALLEN, Auk, xvii, 1900, 366 (Bonda, prov. Santa Marta, Colombia, Oct. 7 to Nov. 24); Bull. Am. Mus. N. H., xiii, 1900, 177 (do.).—BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 114 (Louisiana, breeding).—BRUNER, Proc. Nebr. Orn. Un., 2d ann. meet., 1901, 57 (Omaha and Peru, Nebraska, breeding).

*G[eothlypis] formosa* RIDGWAY, Man. N. Am. Birds, 1887, 520.

*Sylvia æquinoctialis* (not *Motacilla æquinoctialis* Gmelin) VIEILLLOT, Ois. Am. Sept., ii, 1807, 26, pl. 81 (Pennsylvania).

### OPORORNIS AGILIS (Wilson).

#### CONNECTICUT WARBLER.

*Adult male in spring and summer.*—Forehead, crown, and sides of head uniform slate color, relieved by a conspicuous and uninterrupted orbital ring of white; chin, throat, and chest plain slate-gray, paler on

6. *Gothlypis agilis* RINGWAY, Man. N. Am. Birds, 1887, 521.

7. *Trachus tephrocotis* NUTTALL, Man. Orn. U. S. and Can., 2d ed., 1840, 462 (Chester Co., Pennsylvania).

8. *Gothlypis tephrocotis* BARNARD, Ann. Rep. Smithsonian Inst. for 1860 (1861), 435 (Chester Co., Pennsylvania).

9. *Oporornis carolinensis* BLACKSTON, *Ibis*, 1863, 61 (Mackenzie R.).

#### OPORORNIS PHILADELPHIA (Wilson).

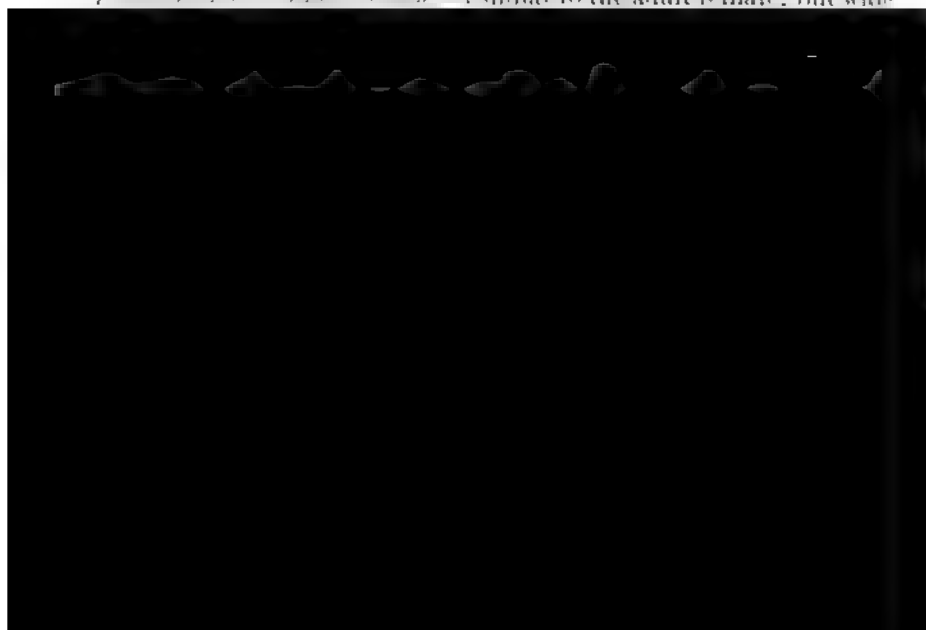
##### MOURNING WARBLER.

*Adult male in spring and summer.*—Head and neck plain slate-gray deepening into slate color on pileum and hindneck, and into almost black on lores; chin, throat, and chest black, the feathers with more or less distinct terminal margins of slate-gray, these sometimes so broad anteriorly and laterally that the black is mainly concealed, except on chest; rest of under parts clear canary yellow, changing to olive-green on sides and flanks; upper parts, except pileum and hindneck, uniform olive-green, the outermost primary edged with whitish; maxilla brownish black with paler tomia; mandible pale brown or horn color (in dried skins); iris brown; legs and feet pale yellowish brown in dried skins (pale flesh color in life!).

*Adult male in autumn and winter.*—Similar to the spring and summer plumage, but (always?) with gray tips to feathers of throat and chest broader, the black appearing only as a broken patch on the chest.

*Adult female in spring and summer.*—Similar to the adult male, but without any black on chin, throat, or chest, which are smoke gray, much paler (sometimes brownish white) on chin and part of throat; slate color of pileum and hindneck duller, tinged more or less with olive; yellow of under parts slightly paler.

*Young of the year in spring and summer.*—Similar to the adult female, but with



stage of *G. trichas* by the ashy cast of the pileum and the absence of brownish on the sides."<sup>1</sup>

*Adult male*.—Length (skins), 118.1–125 (121); wing, 58.4–65 (61.5); tail, 46.2–52.3 (49); exposed culmen, 10.7–12.2 (11.4); tarsus, 20.3–21.8 (20.8); middle toe, 12.7–14 (13.7).<sup>2</sup>

*Adult female*.—Length (skins), 111.5–133.8 (120.9); wing, 54.6–61.7 (58.9); tail, 42.7–49.8 (46.7); exposed culmen, 10.4–11.9 (11.2); tarsus, 20.6–21.3 (20.8); middle toe, 12.4–13.2 (12.7).<sup>3</sup>

Eastern United States and British Provinces; breeding from mountains of West Virginia (spruce belt) and Pennsylvania (Westmoreland County), New York (Delaware, Greene, Oneida, Niagara, and Ontario counties), higher districts of New England, Michigan, eastern Nebraska (?), and Minnesota (Carlton and St. Louis counties), northward at least to northwestern Ontario (Parry Sound and Muskoka) and Manitoba (Winnipeg, Selkirk Settlement, Carberry, Duck Mountain, Waterhen River, Swan Lake, etc.);<sup>4</sup> during migration southward through eastern United States in general (as far west as central Texas), and in winter south to Nicaragua (Greytown), Costa Rica, Chiriqui, Colombia (numerous records), and Ecuador (Mapoto; Machay); no West Indian nor valid Mexican record. Accidental in southern Greenland (two records).

*Sylvia philadelphia* WILSON, Am. Orn., ii, 1810, 101, pl. 14, fig. 6 (near Philadelphia, Pennsylvania, June).—VIEILLLOT, Enc. Méth., ii, 1823, 449.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., ii, 1824, 189; Ann. Lyc. N. Y., ii, 1826, 85.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 404.—AUDUBON, Orn. Biog., v, 1839, 78.

*Trichas philadelphia* JARDINE, ed. Wilson's Am. Orn., i, 1832, 249.—RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—BONAPARTE, Geog. and Comp. List, 1838, 20, part (includes *Oporornis agilis*).—AUDUBON, Synopsis, 1839, 64; Birds Am., oct. ed., ii, 1841, 76, pl. 101.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 459.—CABOT, Naumannia, ii, Heft. iii, 1852, 66 (Lake Superior).—HOY, Proc. Ac. Nat. Sci. Phila., vi, 1853, 312 (Wisconsin).—REINHARDT, Ved. Med. for 1853, 1854, 73 (Greenland); Ibis, 1861, 6 (Fisk-enæsset, Greenland, 1846; Julianshaab, Greenland, 1853; 2 specs).

*T[richas] philadelphia* GRAY, Gen. Birds, i, 1848, 197.

[*Trichas*] *philadelphia* BONAPARTE, Consp. Av., i, 1850, 310.—GRAY, Hand-list, i, 1869, 242, no. 3509.

*Trichas philadelphica* WILLIS, Ann. Rep. Smithson. Inst. for 1858 (1859), 282 (Nova Scotia).—HOY, Ann. Rep. Smithson. Inst. for 1864 (1865), 438 (Missouri).

*Geothlypis philadelphia* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 243; ed. 1860 (Birds N. Am.), atlas, pl. 79, fig. 3; Cat. N. Am. Birds, 1859, no. 172; Review Am. Birds, 1865, 226.—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Panama R. R.); ix, 1868, 94 (Angostura and Dota, Costa Rica).—DRESSER,

<sup>1</sup> Brewster, Bull. Nutt. Orn. Club, iii, 1878, 61.

<sup>2</sup> Eight specimens.

<sup>3</sup> Four specimens.

<sup>4</sup> The breeding range of this species is very imperfectly known, both as to its northern and southern limits.

of pale gray or grayish white; marks on eyelids dull pale yellowish, and an indistinct pale dull yellowish supraloral streak.

*Adult male*.—Length (skins), 118.6–138.2 (125.7); wing, 59.4–65 (62.2); tail, 52.8–63 (55.6); exposed culmen, 10.9–11.7 (11.4); tarsus, 20.6–22.9 (21.6); middle toe, 12.7–13.7 (13.2).<sup>1</sup>

*Adult female*.—Length (skins), 117.6–128 (123.2); wing, 54.6–59.9 (56.9); tail, 48.5–57.9 (52.1); exposed culmen, 10.7–12.2 (11.2); tarsus, 20.1–21.3 (20.6); middle toe, 12.2–12.9 (12.7).<sup>2</sup>

Western United States and British Columbia; breeding in mountains from Pacific coast ranges to Rocky Mountains, north to British Columbia (including Vancouver Island), south at least to Arizona (Fort Whipple), New Mexico, and western Texas ("Castle Hill to Pecos River"); during migrations east to western Nebraska (Sioux County), central Texas (Gainesville; San Antonio), etc.; south in winter to Cape St. Lucas and over whole of Mexico and Central America to Colombia (Bogota; Santa Elena).

*Sylvia tolmiei* TOWNSEND (J. K.), Narrative, Apr., 1839, 343 (Columbia R.; type in coll. U. S. Nat. Mus.).<sup>3</sup>

*Sylvia tolmiei* TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, (pub. 1840), 149, 153, 159.

*Trichas tolmiei* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 460.

*Trichas tolmiei* HEERMANN, Journ. Ac. Nat. Sci. Phila., ii, 1853, 263 (California).

*Trichas tolmiei* HEERMANN, Rep. Pacific R. R. Surv., x, 1859, 40 (California).

*Geothlypis tolmiei* STONE, Auk, xvi, Jan., 1899, 82, in text.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xvi, 1899, 122.—CRAWFORD, Proc. Nebr. Orn.

Union, 2d ann. meet., 1901, 78 (Sioux Co., w. Nebraska, 1 spec., May 22).—

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*Sylvia margillierayi* AUDUBON, Orn. Biog., v, 1839, 75 [pl. 399, figs. 4, 5] (Columbia R.; type in coll. U. S. Nat. Mus.).



- 420 (Vancouver I.).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 94 (Barranca, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 294 (San José, Costa Rica).—COOPER, Orn. Cal., 1870, 96.—SALVIN, Ibis, 1872, 149 (monogr.), 152 (Central American range).—TRIPPE, in Coues' Birds N. W., 1874, 232 (Colorado, breeding to above 9,000 ft.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 303, pl. 15, figs. 4, 5.—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 59 (Denver, Colorado, May 14 to 18), 75 (Fort Garland, Colorado, May 25, 28), 103 (Bowie, White Mts., and Apache, Arizona, Aug. 11 to Oct. 7); Zool. Exp. W. 100th Merid., 1875, 205.—RIDGWAY, Orn. 40th Parallel, 1877, 425 (breeding in w. and e. Humboldt Mts., Nevada, and Wahsatch and Uintah mountains, Utah); Nom. N. Am. Birds, 1881, no. 121.—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 62 (descr. young).—MINOT, Bull. Nutt. Orn. Club, v, 1880, 227 (Boulder and Manitou, Colorado, breeding; descr. nest and eggs; habits).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 155.—BELDING, Proc. U. S. Nat. Mus., v, 1883, 526 (mountains near La Paz, Lower California, winter).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 364 (49th Parallel British America; Orizaba and Jalapa, Vera Cruz; Presidio, near Mazatlan; Dueñas, Guatemala; Chiriqui; Bogota and Santa Elena, Colombia).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 680.—LLOYD, Auk, iv, 1887, 296 (Tom Green and Concho counties, Texas).—MERRILL, Auk, v, 1888, 362 (Fort Klamath, Oregon, breeding; song).—COOKE, Bird Migr. Miss. Val., 1888, 258 (Gainesville, Texas, May 16 and Sept. 3; "Castle Hill to Pecos River," Texas, "probably breeds").—CHERRIE, Auk, vii, 1890, 336 (San José, Costa Rica, 1 spec., Sept. 28); ix, 1892, 22 (do.).—ATTWATER, Auk, ix, 1892, 342 (San Antonio, Texas, rare migr.).—NEHRLING, Our Native Birds, etc., i, 1893, 253.
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- G[eo]thlypis macgillivrayi* COUES, Key N. Am. Birds, 2d ed., 1884, 311.—RIDGWAY, Man. N. Am. Birds, 1887, 522.
- Geothlypis macgillivrayii* SCLATER and SALVIN, Ibis, 1859, 10 (Guatemala).—AIKEN, Proc. Bost. Soc. N. H., xv, 1872, 197 (Black Hills, Wyoming).
- Geothlypis macgillivrayi* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz), 373 (Oaxaca).
- Geothlypis mcgillivrayi* COOPER, Am. Nat., iii, 1872, 477.
- Geothlypis philadelphia*, var. *macgillivrayi* ALLEN, Bull. Mus. Comp. Zool., iii, July, 1872, 166 (Ogden, Utah), 175 (Colorado); Proc. Bost. Soc. N. H., xvii, 1874, 52 (Musselshell R., North Dakota).—RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 459.—NELSON, Proc. Bost. Soc. N. H., xvii, 1875, 339 (Fort Bridger, Wyoming).—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 17 (Chihuitan and Tehuantepec City, Oaxaca).
- [*Geothlypis philadelphia*]  $\beta$ . *macgillivrayi* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 459.
- Geothlypis philadelphia* . . . var. *macgillivrayi* RIDGWAY, Bull. Essex Inst., v, 1873, 180 (Colorado).
- [*Geothlypis philadelphia*]  $\beta$ . *macgillivrayi* COUES, Birds N. W., 1874, 75 (synonymy).
- Geothlypis philadelphia macgillivrayi* MEARNs, Bull. Nutt. Orn. Club, iv, July, 1879, 164 (Fort Klamath, e. Oregon).
- [*Geothlypis philadelphia*] var. *macgillivrayi* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 297.
- Geothlypis philadelphia*, var. *macgillivrayi* LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269 (Mazatlan, Sept. to Apr.).
- [*Trichas*] *vegata* BONAPARTE, Consp. Av., i, 1850, 310 (Mexico; ex *Sylvia vegata* Lichtenstein, manuscript).

Ibis, 1865, 476 (San Antonio, Texas).—McILWRAITH, Proc. Essex Inst., v, 1896, 85 (Hamilton, Ontario).—BUTCHER, Proc. Ac. Nat. Sci. Phila., 1868, 149 (Laredo, Texas, Sept.).—FRANTZUS, Journ. für Orn., 1869, 294 (San José, Costa Rica).—WYATT, Ibis, 1871, 322 (Ocafia, Magdalena Valley, Colombia).—MAYNARD, Proc. Bost. Soc. N. H., xiv, 1872, 362 (New Hampshire, Maine).—ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 126 (s. Kansas): Auk, xvii, 1900, 360 (Chirua and La Concepcion, prov. Santa Marta, Colombia, Feb. 12 to Mar. 25).—SALVIN, Ibis, 1872, 149 (monogr.).—COUES, Check List, 1873, no. 98; 2d ed., 1882, no. 142; Birds N. W., 1874, 75, part; Birds Col. Val., 1878, 313, footnote (synonymy).—SNOW, Birds Kansas, 1873, 4 (Topeka, s. Kansas, 1 spec.).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 301, pl. 15, figs. 6, 9.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 440 (n. New England, breeding).—NEWTON, Man. Nat. Hist. Greenland, 1875, 98 (Fiskeneset, 1846; Julianshaab, 1853).—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 61 (descr. young).—MEARNS, Bull. Nutt. Orn. Club, iii, 1878, 69 (remarks on plumage).—MERRILL, Proc. U. S. Nat. Mus., i, 1878, 124 (Fort Brown, Texas, Sept. 7).—SELAGER and SALVIN, Proc. Zool. Soc. Lond., 1879, 494 (Cauca Valley, Colombia).—RATHBUN, Rev. List Birds Centr. New York, 1879, 13 (rare summer resid.).—HATCH, Rep. Geol. and Nat. Hist. Surv. Minnesota for 1879 (1880), 158 (breeding in Carlton and St. Louis counties; habits, song, etc.).—RIDGWAY, Norn. N. Am. Birds, 1881, no. 120; Orn. Illinois, i, 1889, 169.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 154.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 366 (Chiriqui; Bogota, Medellin, and Antioquia, Colombia, etc.).—TACZANOWSKI and BRILBERSCH, Proc. Zool. Soc. Lond., 1885, 74 (Mapoto, Ecuador, Jan.).—AUGENBORG, Auk, ii, 1885, 278 (s. e. South Dakota).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 679.—RALPH, Trans. Oneida Hist. Soc., iii, 1886, 141 (Oneida Co., New York, breeding).—LYON, Auk, iv, 1887, 296 (Concho Co., Texas, fall migrant).—COOKE, Bird Migr. Mian. Val., 1888, 258 (w. Manitoba; breeding in Minnesota, s. Nebraska, and n. Illinois).—THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 622 (Manitoba, summer resid.; localities; habits, song).—BATHURST, Auk vi, 1890, 295 (Overlook Mt., Catskills,

- b. Under tail-coverts buffy whitish or pale buff, without grayish brown or olive base; superciliary stripe white, broader, and more sharply defined posteriorly; under parts more sparsely streaked on a white or buffy white ground, the streaks grayish brown. (Eastern United States, south in winter to West Indies and through Mexico and Central America to Colombia.)

*Seiurus motacilla* (p. 639)

- bb. Under tail-coverts yellowish white or pale yellow, with concealed portion grayish brown or olive; superciliary stripe yellowish, narrower, and less sharply defined posteriorly; under parts more thickly streaked on a yellowish white or pale yellow ground, the streaks dark sooty brown or blackish. (*Seiurus noveboracensis*.)

- c. Smaller (averaging wing 76.9, exposed culmen 12.7, in adult male; wing 72.6, culmen 12.7, in adult female); color of upper parts browner or more olivaceous; under parts more decidedly yellowish. (Eastern North America, chiefly toward Atlantic coast; south in winter to West Indies and along Atlantic coast of Central America to Colombia, Venezuela, etc.)

*Seiurus noveboracensis noveboracensis* (p. 642)

- cc. Larger (averaging wing 77.3, exposed culmen 13.6, in adult male; wing 75.7, exposed culmen 13.2, in adult female); color of upper parts darker and more sooty, under parts less pronouncedly yellowish. (Western North America, chiefly the interior; occasional in Atlantic States during migration; south in winter to Cape St. Lucas and through Mexico and Central America to Colombia) ..... *Seiurus noveboracensis notabilis* (p. 645)

### SEIURUS AUROCAPILLUS (Linnæus).

#### OVENBIRD.

*Adults (sexes alike).*—Pileum with two narrow lateral stripes of black inclosing a much broader median stripe of ochraceous, tawny-ochraceous, or ochraceous-buff, the feathers of the latter more or less tipped with pale olive, especially on occiput, which is sometimes uniform light olive or grayish olive; superciliary region (broadly) light grayish olive, fading into a lighter hue of the same on auricular region; rest of upper parts plain dull olive-green or greenish olive, the inner webs of remiges and rectrices grayish brown (hair brown); a whitish orbital ring; lores grayish white or dull whitish; malar region and under parts white, the chest and sides heavily streaked with black, the flanks more narrowly and less distinctly streaked; a dusky submalar streak; axillars and under wing-coverts pale olive-yellow or dull sulphur yellow; maxilla dark brown, mandible much paler; iris brown; legs and feet pale brown in dried skins, pale flesh color in life.

(In winter similar to the spring and summer plumage but colors rather brighter, and white of malar stripe and flanks sometimes tinged with buff, though the latter may characterize young birds in their first year.)

*Young, first plumage.*—Pileum, hindneck, back, scapulars, rump, and upper tail-coverts dull wood brown or isabella color, the first with faint indications of two darker stripes, the back and scapulars with indistinct darker streaks; wings and tail as in adults, but middle and greater wing-coverts tipped or margined terminally with pale wood



[*Motacilla*] *aurocapilla* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 334 (based on *The Golden-crowned Thrush*, *Turdus vertice aureo*, Edwards, *Gleanings Nat. Hist.*, v, 91, pl. 253, lower fig; *Le Figuier à teste d'or de Proserpine*, *Ficedula pensilvanica auro-capilla*, Brisson, Orn., iii, 504). — GÜNELIN, Syst. Nat., i, 1788, 982.

[*Turdus*] *aurocapillus* LATHAM, Index Orn., ii, 1790, 328.

*Turdus aurocapilla* WILSON, Am. Orn., iii, 1810, 88, pl. 14, fig. 2. — STEPHENS, Shaw's Gen. Zool., x, 1817, 199. — VIEILLIOTT, Enc. Méth., ii, 1823, 641. — BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 35. — NUTTALL, Man. Orn. U. S. and Can., i, 1832, 355; 2d ed., i, 1840, 404. — AUDUBON, Orn. Biog., ii, 1834, 253, v, 1839, 447, pl. 143. — TOWNSEND, Journ. Ac. Nat. Sci. Phila., viii, 1839, 153 (in w. United States). — WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 281 (Nova Scotia).

*Sylvia aurocapilla* BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 77.

*Securus aurocapillus* SWAINSON, Zool. Journ., iii, 1827, 171, Philos. Mag., n. s., i, 1827, 369 (Mexico). — ID., 1830, 1154. — SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 227. — JARDINE, ed. Wilson's Am. Orn., i, 1832, 238. — BONAPARTE, Geog. and Comp. List, 1838, 21. — AUDUBON, Synopsis, 1839, 93. — Birds Am., oct. ed., iii, 1841, 35, pl. 148. — GOSSE, Birds Jamaica, 1847, 152. — SALLÉ, Proc. Zool. Soc. Lond., 1857, 231 (Santo Domingo). — BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 260, Cat. N. Am. Birds, 1859, no. 186, Review Am. Birds, 1865, 214, 266. — MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 294 (Jamaica). — GUNDELACH, Report Fisico-Nat. Cuba, i, 1865, 325 (Cuba); Journ. fur Orn., 1872, 416 (Cuba), Orn. Cuba, 1873, 68; Anal. Soc. Esp. Hist. Nat., vii, 1878, 175 (Porto Rico). — BRYANT, Proc. Bost. Soc. N. H., xi, 1867, 68 (Bahamas), 91 (Santo Domingo). — LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 94 (Barbarea, Costa Rica). — MEM. BOST. SOC. N. H., ii, 1874, 269 (Mazatlan, Nov. to Apr.). — FRANKLIN, Journ. fur Orn., 1869, 293 (San José, Costa Rica). — SCHUMBRANT, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, etc., Vera Cruz, winter). — DALL and BAXTER, Trans. Chicago Ac. Sci., i, 1869, 268 (Fort Yukon, etc., Alaska, breeding). — ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269 (e. Florida, Feb.); iii, 1872, 175 (Kansas); Proc. Bost. Soc. N. H., xvii, 1874, 52 (Fort Rice, Heart R., etc., North Dakota). — COLES, Birds N. W., 1874, 70. — MAYNARD, Birds Florida, 1872, 12. — BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 280, pl. 14, fig. 11. — BOUCARD, Proc. Zool. Soc. Lond., 1878, 51 (San José, Costa Rica, Jan. Mar.). — COLE, Birds Bahama I., 1880, 70, Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti); Birds Haiti and San Dom., 1885, 34; Auk, iii, 1886, 42 (West Indian references); iv, 1887, 180 (Old Providence I., Caribbean Sea), vi, 1889, 31 (Cayman Brac, Bahamas); ix, 1902, 49 (Watlings I., Bahamas); Birds W. I., 1889, 56; Cat. W. I. Birds, 1902, 119 (Great Bahama, Abaco, Rumins, Berry islands, Eleuthera, New Providence, Andros, Cat. I., Watlings I., Rum Cay, Long I., Green Cay, N. Caicos, Grand Caicos, E. Caicos, and Great Inagua, Bahamas, Cuba, Grand Cayman; Jamaica; Haiti, Porto Rico, St. Croix). — AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 674. — NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 203 (Fort Yukon, Nulato, etc.). — RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 576 (Swan I., Caribbean Sea, Feb. 24), Orn. Illinois, i, 1889, 158. — COOKE, Bird Migr. Miss. Val., 1888, 255 (dates of migr., etc.). — CHERRIE, Auk, vii, 1890, 336 (San José, Costa Rica, 1 spec., Oct. 27), Contr. Orn. San Dom., 1896, 11. — NORTHRUP, Auk, viii, 1891, 68 (Andros and New Providence islands, Bahamas). — RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 484 (Rio Escondido, Nicaragua, Nov. 7 to May 6). — NEWELL, Our Native Birds, etc., i, 1893, 238, pl. 14, fig. 6. — THORNE, Auk, xii, 1895, 218 (Fort Keogh, Montana, 1 spec., July 23). — BEYER, Proc. Louis. Soc. Nat. for 1897-98 (1900), 114 s. and s. w. Louisiana, winter resid.). — BASOR, Proc. New Engl. Zool. Club, iii, 1902, 62 (Volcan de Chiriqui and Boquete, Chiriqui, Feb. 20 to Apr. 15).

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*S[ciurus] auricapillus* RIDGWAY, Man. N. Am. Birds, 1887, 518.  
*Sciurus auricapillus* D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Oia., 1839, 55.  
*Sciurus auricapillus* SCLATER and SALVIN, Ibis, 1859, 9 (Guatemala).—NEWTON (A. & E.), Ibis, 1859, 142 (St. Croix).  
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*Enicocichla auricapillus* BREWER, Proc. Bost. Soc. N. H., vii, 1860, 306 (Cuba).  
*H[enicocichla] auricapilla* C'ABANIS, Mus. Hein., i, 1850, 15 (Mexico).  
*Henicocichla auricapilla* GUNDELACH, Journ. für Orn., 1855, 471 (Cuba); 1861, 326, 407 (Cuba).—C'ABANIS, Journ. für Orn., 1861, 84 (Costa Rica).—SCLATER, Cat. Am. Birds, 1862, 25 (Orizaba, Vera Cruz; Jamaica).—LAWRENCE, Ann. Lyc. N. Y., viii, 1865, 180 (Greytown, Nicaragua).—SALVIN, Proc. Zool. Soc. Lond., 1870, 183 (Volcan de Chiriqui).  
*Henicocichla auricapilla* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 596 (Porto Rico).  
*Turdus auricapillus* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 2 (see Journ. für Orn., 1863, 57).  
*Accentor auricapillus* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.  
*Sciurus auricapillus* SWAINSON, Classif. Birds, ii, 1837, 247.—LAWRENCE, Ann. Lyc. N. Y., ix, 1869, 200 (Yucatan); Bull. U. S. Nat. Mus., no. 4, 1876, 14 (Guichicovi, Chiapas, Sept.).  
*[Sciurus] auricapillus* BONAPARTE, Consp. Av., i, 1850, 306.  
*Sciurus auricapillus* SCLATER and SALVIN, Ibis, 1859, 9 (Dueñas, Guatemala, Feb.).—MOORE, Proc. Zool. Soc. Lond., 1859, 55 (Omas, Honduras).—COUES, Bull. Nutt. Orn. Club, ii, 1877, 31; Birds Col. Val., 1878, 297; Check List, 2d ed., 1882, no. 135.—RIDGWAY, Bull. Nutt. Orn. Club, iii, 1878, 60 (descr. young); Nom. N. Am. Birds, 1881, no. 115.—MINOR, Bull. Nutt. Orn. Club, v, 1880, 227 (Boulder, Nederland, and Denver, Colorado, May).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 144.—BREWSTER, Proc. Bost. Soc. N. H., xxii, 1883, 371 (Anticosti I., 1 pair, July 24).—BICKNELL, Auk, i, 1884, 23 (Anticosti).—SCLATER, Cat. Birds Brit. Mus., x, 1885, 539, 652 (Esqui-

## SEIURUS MOTACILLA (Vieillot).

## LOUISIANA WATER THRUSH.

*Adults (sexes alike).*<sup>1</sup>—Above plain grayish olive, slightly darker on pileum; a conspicuous superciliary stripe of white, extending from nostril to beyond end of auricular region; a triangular loreal spot and broad postocular stripe of dark grayish olive, the latter sometimes involving greater part of the auricular region, the lower portion of which, however, is always paler and more or less streaked with dull whitish; a crescentic mark of white on lower eyelid; malar region white, usually more or less flecked with grayish olive; under parts white or buffy white, becoming pronouncedly buffy (usually clear pale buff or cream buff) on flanks and under tail-coverts, all the under parts of the body sometimes strongly tinged with buff; chin and throat immaculate or with only a few minute flecks; chest, sides, and flanks broadly streaked with grayish olive (similar to color of upper parts, but somewhat darker), the streaks on anterior portion of chest smaller, more distinctly triangular or wedge-shaped; axillars and under wing-coverts brownish gray or hair brown; maxilla horn brownish basally, becoming darker terminally; mandible similar in color to maxilla but paler brownish basally; iris brown; legs and feet pale yellowish brown in dried skins (pale flesh color in life).

*Young, first plumage.*—Similar to adults, but upper parts more sooty brown, the rump and upper tail-coverts sometimes tinged with or inclining to more rusty brown; middle and greater wing-coverts narrowly margined at tips with paler brown; streaks on under parts much less distinct than in adults, decidedly paler in color than upper parts.

*Adult male.*—Length (skins), 127–139.7 (133.8); wing, 75.7–84.3 (80.8); tail, 49.5–55.4 (51.8); exposed culmen, 12.4–13.5 (13.2); tarsus, 21.6–22.9 (22.3); middle toe, 14–15.2 (14.2).<sup>2</sup>

*Adult female.*—Length (skins), 129.5–142.2 (135.1); wing, 75.9–81 (78.7); tail, 49.5–52.6 (50.8); exposed culmen, 12.9–14.2 (13.5); tarsus, 21.6–23.4 (22.9); middle toe, 14–15 (14.5).<sup>3</sup>

<sup>1</sup> After careful examination of a large series of specimens, I can not find that there is any difference in plumage according to season, some birds taken in April and May being quite as strongly colored as any autumnal or winter specimens.

<sup>2</sup> Eleven specimens.

<sup>3</sup> Five specimens.

Specimens from the Atlantic coast district and those from the Mississippi Valley average, respectively, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen	Tarsus.	Middle toe.
<b>MALES.</b>					
Six adult males from Atlantic coast district .....	82	52.6	12.9	22.3	14.5
Five adult males from Mississippi Valley .....	78.7	50.8	13.2	22.3	14.2
<b>FEMALES.</b>					
Two adult females from District of Columbia .....	80	52.1	13.2	22.3	14.5
Three adult females from Illinois and Texas ..	77.7	50.3	13.7	23.1	14.5

Eastern United States and southern Ontario; breeding from the Gulf States north to Connecticut (Norwich, etc.), eastern Rhode Island (Johnson), southwestern Massachusetts (Berkshire County), southeastern New York (lower Hudson Valley), lower districts of Pennsylvania, northeastern Ohio (Wayne County), southern Ontario (near Hamilton), southern Michigan, northern Illinois, and southeastern Minnesota (Mississippi bottoms as far as Red Wing), west to eastern Nebraska (Omaha, Peru, etc.), eastern Kansas, and Texas (Navarro County); occurring irregularly north to northeastern New York (Lake George); in winter, south to West Indies (Bahamas, Cuba, Grand Cayman, Jamaica, Haiti, Porto Rico, Antigua), island of Old Providence, Caribbean Sea, and through Mexico (both coasts) and Central America to Colombia (province of Santa Marta).

*Turdus motacilla* VILLIOT, Ois. Am. Sept., ii, 1807, 9, pl. 65 (Kentucky); Nouv. Dict. d'Hist. Nat., xx, 1818, 234; Enc. Méth., ii, 1823, 643.—STEPHENS, Shaw's Gen. Zool., x, 1817, 197.

[*Scirurus*] *motacilla* BONAPARTE, Cons. Av., i, 1850, 306.—CORY, List Birds W. I., 1885, 35.

*Scirurus motacilla* CORY, Birds Haiti and San Dom., 1885, 35; Auk, iii, 1886, 43 (West Indian references), 501, (Grand Cayman; iv, 1887, 180 (Old Providence I., Caribbean Sea); Birds W. I., 1889, 57; Cat. W. I. Birds, 1892, 119 (Bimini and Berry islands, Bahamas, Cuba; Jamaica; Haiti; Antigua).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 136 (Jalapa, Vera Cruz).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 676.—RINGWAY, Orn. Illinois, i, 1889, 160.—BUTLER, Bull. Brooklyn Soc. N. H., no. 2, 1888, 36 (Franklin Co., Indiana, summer resid.).—COOKE, Bird Migr. Miss. Val., 1888, 257 (Mississippi Valley localities and dates).—EVERMANN, Auk, vi, 1889, 28 (Carroll Co., Indiana, breeding).—SCOTT, Auk, vii, 1890, 21 (Key West, Florida, rare migr., July 16 and Apr. 6, 2 specs.)—CHERRIE, Auk, vii, 1890,



- (remarks on plumage) BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 133 (deser. nest and eggs). DEANE, Bull. Nutt. Orn. Club, v, 1880, 116 (Johnson, v. Rhode Island, breeding). LAWRENCE (R.), Bull. Nutt. Orn. Club, v, 1880, 116 (Long Island).—FISHER (A. K.), Bull. Nutt. Orn. Club, v, 1880, 117 (Lake George, New York, 2 spec., May). vi, 1881, 245 (do, 1 spec., May 16). MERRIAM, Bull. Nutt. Orn. Club, vi, 1881, 229 (Lake George). RINGWAY, Nom. N. Am. Birds, 1881, no. 117. SALVIN and GOODMAN, Biol. Centr.-Am. Aves, i, 1881, 147.—GILBY, Sci. Proc. Roy. Dubl. Soc., iii, 1882, (21) (Navarro Co., Texas, breeding). BROWN (N. C.), Bull. Nutt. Orn. Club, vii, 1882, 36 (Boerne, s. w. Texas, 1 spec., Mar.). BICKNELL, Auk, i, 1884, 215 (song). SHARPE, Cat. Birds Brit. Mus., x, 1885, 342.
- [*Sturnus*] *notacella* NEWBORN (A. and E.), Handb. Jamaica, 1881, 105.—COUES, Key N. Am. Birds, 2d ed., 1884, 309.
- [*Eucochelidon*] *notacella* CABANIS, Mus. Hein., i, 1850, 16, footnote.
- Henicocochla notacella* CABANIS, Journ. für Orn., 1857, 240 (Cuba).—GUNDLACH, Journ. für Orn., 1861, 326 (Cuba).
- Turdus ludovicianus* AUDUBON, Orn. Biog., i, 1831, 99, pl. 19 (lowlands of Louisiana and Mississippi).
- Seiurus ludovicianus* BONAPARTE, Geog. and Comp. List, 1838, 21.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 262, ed. 1890 (Birds N. Am.), atlas, pl. 80, fig. 2; Cat. N. Am. Birds, 1859, no. 188, Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 10 (Tumacalipas, Mar.), Review Am. Birds, 1865, 217. BARNARD, Ann. Rep. Smithsonian Inst. for 1860 (1861), 435 (Chester Co., Pennsylvania).—GUNDLACH, Repert. Físico-Nat. Cuba, i, 1865, 236; Journ. für Orn., 1872, 417 (Cuba). Orn. Cuba, 1893, 68. LAWRENCE, Ann. Lyc. N. Y., viii, 1869, 284 (vicinity of New York City), ix, 1868, 94 (Barranca, Costa Rica), Mem. Bost. Soc. N. H., ii, 1874, 269 (Mazatlan; Sierra Madre de Oajima, Dec., coast ranges of w. Mexico, Jan., Apr.), Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Barrio and Santa Etgenia, Oaxaca, Sept., Jan.). COUES, Check List, 1873, no. 94; Birds N. W., 1874, 72. SNOW, Birds Kansas, 1873, 5.—BAIRD, BREWER, and RINGWAY, Hist. N. Am. Birds, i, 1874, 287, pl. 14, fig. 13; iii, 1874, 506 (Norwich, Connecticut, breeding, descr. nest and eggs).—BREWER, Proc. Bost. Soc. N. H., xvi, 1875, 440 (Massachusetts, occasional; Connecticut, breeding). BREWSTER, Ann. Lyc. N. Y., xi, 1875, 136 (Ritchie Co., West Virginia; habits; song).
- [*Seiurus*] *ludovicianus* COUES, Key N. Am. Birds, 1872, 106.
- Seiurus ludovicianus* SCIATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz), 373 (Totontepec, Oaxaca). SALVIN and SCIATER, Ibis, 1860, 273 (Atotenango, Volcan de Fuego, and Coban, Guatemala, Sept. to Nov.).—NELSON, Bull. Nutt. Orn. Club, i, 1876, 42 (n. e. Illinois, breeding). COVERT, Oologist, iv, 1878, 10 (deser. nest and eggs).—CORY, Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti). BOLLARD, Proc. Zool. Soc. Lond., 1883, 440.
- [*Sturnus*] *ludovicianus* SCIATER and SALVIN, Nom. Av. Neotr., 1873, 8.
- [*Sturnus*] *ludovicianus* NELSON, Bull. Essex Inst., viii, 1876, 100, 152 (n. e. Illinois, common summer resid.).
- Seiurus ludovicianus* THORPE, Proc. Bost. Soc. N. H., xv, 1872, 234 (Decoratur and Mahaska counties, s. Iowa, breeding).
- Henicocochla ludovicianus* SCIATER, Proc. Zool. Soc. Lond., 1861, 70 (Jamaica); Cat. Am. Birds, 1862, 25 (Orizaba, Vera Cruz, Jamaica).—ALBRECHT, Journ. für Orn., 1862, 192 (Jamaica).—SALVIN, Proc. Zool. Soc. Lond., 1870, 183 (Bugabá, Veragua).
- [*Eucochelidon*] *ludovicianus* GRAY, Hand list, i, 1869, 249, no. 3613.
- [*Eucochelidon*] *major* CABANIS, Mus. Hein., i, 1850, 16 (Jalapa, Vera Cruz, Mexico, coll. Berlin Mus.).

*Hemicocichla major* CABANIS, JOURN. fur Orn., 1857, 240 (Cuba)

*Hemicocichla major* BREWER, Proc. Bost. Soc. N. H., vii, 1890, 306 (Cuba)

*Seiurus noveboracensis* (not *Molucilla noveboracensis* Gmelin) AUDUBON, Synopsis, 1839, 93, part.

(?) *Seiurus noveboracensis* DRESSER, Ibis, 1865, 477, part (Medina R., Texas, "all the summer," fide Heermann).

(?) *Seiurus colombianus* LESSON, Descr. Mam. et Ois., 1847, 294 (Colombia).

**SEIURUS NOVEBORACENSIS NOVEBORACENSIS (Gmelin).**

**WATER-THRUSH.**

*Adults (sexes alike).*—Above plain olive; a broad superciliary stripe of buff, extending from nostril to sides of nape; a triangular spot of dusky olive in front of eye, and a broad postocular streak of the same; a crescentic mark of light buffy on lower eyelid; suborbital and auricular regions streaked with olive and yellowish or pale buffy; broad malar stripe and under parts pale yellow (primrose yellow to straw yellow)—rarely nearly white—the chest, sides, and flanks more or less broadly streaked with dark sooty olive (sometimes nearly black) the lower throat with shorter triangular or wedge-shaped marks, the upper throat usually with small triangular spots or flecks, of the same; under tail-coverts with concealed portion extensively olive or grayish olive; bill dusky brown, the mandible paler, especially in winter; iris brown; legs and feet clear brown (in dried skins).

*Young, first plumage.* Above olive, the feathers with a subterminal bar of dusky and a terminal bar of buff, producing a conspicuous transversely mottled appearance; wings and tail as in adults, but middle and greater wing-coverts tipped with buff, forming two narrow bands across wing; superciliary stripe less distinct than in adult, finely streaked with dusky; whole throat, chest, and sides of breast heavily streaked with dusky or dark sooty, on a pale buff-yellowish ground, the streaks much less sharply defined than in adults; rest of under parts pale straw or primrose yellow, the sides and flanks mottled or clouded with dusky.

*Adult male.*—Length (skins), 125.5–142.7 (135.1); wing, 75.4–80 (76.7); tail, 45–53.6 (51.3); exposed culmen, 11.9–14 (12.7); tarsus, 19.8–22.3 (21.3); middle toe, 12.9–14 (13.5).<sup>1</sup>

*Adult female.* Length (skins), 118.4–138.7 (130.5); wing, 68.3–75.7 (72.6); tail, 45–52.1 (49.5); exposed culmen, 10.9–14.7 (12.7); tarsus, 20.3–21.6 (21.1); middle toe, 12.4–13.7 (13.2).<sup>2</sup>

Eastern North America; north to Davis Inlet, Newfoundland, and shores of Hudson Bay;<sup>3</sup> breeding southward to northern New England, mountains of Pennsylvania (Clearfield, Elk, Cambria, and Lycoming

<sup>1</sup> Nine specimens.

<sup>2</sup> Eight specimens.

<sup>3</sup> Breeding birds from the western side of Hudson Bay are intermediate between this form and *S. n. notabilis*.

counties) and West Virginia (spruce belt), southern Michigan (?), north-eastern Illinois (?), etc.; in winter southward throughout West Indies and along eastern coast districts of Central America to Colombia, Venezuela, British Guiana, Brazil (?), Trinidad, and Tobago, and to Swan Island and Old Providence Island, Caribbean Sea.<sup>1</sup> Occasional in Bermudas; accidental in southern Greenland (two records).

*Motacilla nivalis* (not of Boddaert, Tabl. Pl. Enl., 1783, 35<sup>2</sup>) BODDAERT, Tabl. Pl. Enl., 1783, 47 (based on *Fauvette tacheté, de la Louisiane*, Daubenton, Pl. Enl., pl. 752, fig. 1).

*Scoiurus naevius* COUES, Bull. Nutt. Orn. Club, ii, Apr., 1877, 32; Birds Col. Val., 1878, 299; Check List, 2d ed., 1882, no. 136. LAWRENCE, Proc. U. S. Nat. Mus., i, 1878, 54 (Dominica), i, 1879, 233 (Antigua), 453 (Guadeloupe), 486. KIMLIE, Bull. U. S. Nat. Mus., no. 15, 1879, 74 (Straits of Belle Isle, Aug. 18). RIDGWAY, Nom. N. Am. Birds, 1881, no. 116. ALLEN, Bull. Nutt. Orn. Club, vi, 1881, 128 (Santa Lucia).—BREWSTER, Bull. Nutt. Orn. Club, vi, 1881, 239 (New England breeding range confined to Canadian fauna). STEARNS, Proc. U. S. Nat. Mus., vi, 1883, 117 (int. Labrador, breeding (?) ). BOLCARD, Proc. Zool. Soc. Lond., 1883, 440 (Yucatan).—DALGLEISH, Bull. Nutt. Orn. Club, vii, 1883, 179 (Nanortalik, Greenland; 1 spec., May, 1882).—BURNELL, Auk, i, 1884, 214 (song). SHARPE, Cat. Birds Brit. Mus., x, 1885, 344, 652, part (Tobago; Paraiso Station, Panama R R; Medellin, Bogota, and Minca, Colombia; Bartica Grove and Roraima, British Guiana, etc.).

*[Scoiurus] naevius* COUES, Key N. Am. Birds, 2d ed., 1884, 309.

*Seiurus naevius* TURNER, Proc. Ac. Nat. Sci. Phila., viii, 1885, 238 (Davis Inlet; Moose Factory, Hudson Bay).—WELLS, Proc. U. S. Nat. Mus., ix, 1886, 611 (Grenada, Lesser Antilles).

*[Motacilla] noveboracensis* GIMELIN, Syst. Nat., i, pt. 2, 1788, 958 (based on *Fauvette tacheté, de la Louisiane*, Daubenton, Pl. Enl., pl. 752, fig. 1).—LATHAM, Index Orn., i, 1790, 362.

*[Sylvia] noveboracensis* LATHAM, Index Orn., ii, 1790, 518.

*Sylvia noveboracensis* VIEILLIOT, Ois. Am., Sept., ii, 1807, 26, pl. 82. —STEPHENS, Shaw's Gen. Zool., x, 1817, 681. —BONAPARTE, Ann. Lyc. N. Y., ii, 1826, 77.

*Turdus (Seiurus) noveboracensis* (not *Turdus noveboracensis* Gmelin<sup>3</sup>) NUTTALL, Man. Orn. U. S. and Can., i, 1832, 453, part.

*[Cyrus] noveboracensis* LESSON, Traité d'Orn., 1831, 418.

*Turdus noveboracensis* (not of Gmelin) PEABODY, Rep. Orn. Mass., 1839, 306.

*Seiurus noveboracensis* BONAPARTE, Geog. and Comp. List, 1838, 21. —CROSSE, Birds Jamaica, 1847, 151. Illustr. Birds Jam., 1849, pl. 28. JARDINE, Contr. Orn., 1848, 82 (Bermudas, winter resid.). —HERDIS, Jardine's Contr. Orn., 1850, 8 (Bermudas). —HARTLAUB, Naumannia, 1852, 53 (Cuba). BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 261; ed. 1860 (Birds N. Am.), pl. 80, fig.

<sup>1</sup> In the absence of specimens from various localities cited in the synonymy it is very difficult to make out with greater exactness the range of this form, the difficulty being rendered still greater from the fact that both it and *S. n. notabilis* often occur together during migration. Nearly every one of the West Indian islands (including the Bahama group) is represented among the specimens examined, together with the following Central American localities: Guatemala (Yzabal, January). Nicaragua (San Juan del Sur, January 10, Sucuyá, February 12; Greytown, February 5), Costa Rica (San José). The only Mexican specimen seen is one from the island of Cozumel, Yucatan (January 29). The most western United States example examined is one from Edinburg, Texas, May.

<sup>2</sup> = *Locustella naevia* (Boddaert).

<sup>3</sup> = *Scolecophagus carolinus* (Müller).

- 1; Cat. N. Am. Birds, 1859, no. 187, part; Review Am. Birds, 1865, 215, part.—MARTENS, Journ. für Orn., 1859, 213 (Bermudas).—BLAND, Ann. Rep. Smithsonian Inst. for 1858 (1859), 287 (Bermudas).—L'ASSIS, Proc. Ac. Nat. Sci. Phila., xii, 1860, 191 (Cartagena, Colombia).—(?) LAWRENCE, Ann. Lye N. Y., vii, 1861, 322 (Panama R. R.), ix, 1868, 94 (San José and Angostura, Costa Rica); ix, 1869, 200 (Merida, Yucatan).—MARSH, Proc. Ac. Nat. Sci. Phila., xv, 1863, 294 (Jamaica).—BRYANT, Proc. Bost. Soc. N. H., xi, 1867, 68 (Bahamas), 91 (Santo Domingo).—(?) FRANTZUS, Journ. für Orn., 1869, 293 (San José and Angostura, Costa Rica).—(?) SUMMCHRAST, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, etc., Vera Cruz).—GUNDLACH, Repert. Físico-Nat. Cuba, i, 1865, 235, Journ. für Orn., 1872, 416 (Cuba); Orn. Cuba, 1873, 68. Anal. Soc. Esp. Hist. Nat., vii, 1878, 175 (Porto Rico).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269 (e Florida, Feb.); Bull. Am. Mus. N. H., xiii, 1900, 177 (Bonda and Uenega, Santa Maria, Colombia, Sept. 8 to Nov. 5).—COUES, Check List, 1873, no. 93, part, Birds N. W., 1874, 71, part. —BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 283, part, pl. 14, fig. 12. —BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 440 (n. New England, breeding).—CORY, Birds Bahama I., 1880, 71, Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti); Auk, iii, 1886, 42 (West Indian references); iv, 1887, 95 (Martinique), 180 (Old Providence I., Caribbean Sea), 181 (St. Andrews I., Caribbean Sea); vi, 1889, 31 (Cayman Brac, Bahamas); viii, 1891, 48 (St. Croix), 49 (Guadeloupe), 352 (Cay Sal, Bahamas, May), Birds W. I., 1889, 56, Cat. W. I. Birds, 1892, 119 (St. Bahama, Abaco, Biminia, Eleuthera, New Providence, Watlings I., Great Inagua, and Cay Sal, Bahamas, Cuba, Isle of Pines, Jamaica, Mona, Porto Rico, and St. Croix, Greater Antilles; Antigua, Guadeloupe, Dominica, Grenada, and Barbados, Lesser Antilles).—AMERICAN ORNITHOLOGISTS UNION, Check List, 1886, no. 675. —RIDGWAY, Proc. U. S. Nat. Mus., x, 1888, 576 (Swan I., Caribbean Sea); Orn. Illinois, i, 1889, 161. —SCOTT, Auk, vii, 1890, 21 (Punta Rassa, Tarpon Springs, and Key West, Florida; migrant), 314 (Garden Key, Tortugas, Florida, Apr. 25 to May 2). —HAGGRIFF, Auk, viii, 1891, 320 (Greenland). —DWIGHT, Auk, ix, 1892, 139 (Cresson and North Mt., Pennsylvania, breeding). —TOWN, Auk, x, 1893, 45 (Clearfield Co., Pennsylvania, breeding). —NEHRING, Our Native Birds, etc., i, 1903, 242. —CHAPMAN, Bull. Am. Mus. N. H., vi, 1894, 24 (Trinidad). —CHERRILL, Contr. Orn. San Dom., 1896, 11 (2 spec., Feb. 24, Mar. 16). —BAIRD, Auk, xiii, 1896, 296 (n. Elk Co., Pennsylvania, breeding). —RIVES, Auk, xv, 1898, 136 (West Virginia, breeding in spruce belt). —BANDS, Proc. Biol. Soc. Wash., xiii, 1899, 105 (La Concepcion and Chirun, Santa Marta, Colombia, Feb., Mar.); Proc. New Engl. Zool. Club, iii, 1902, 62 (Boquete, Chiriqui, Mar. 27). —BIGELOW, Auk, xix, 1902, 90 (coast of Labrador, breeding north to Aillik).
- [*Sciurus*] *noveboracensis* BONAPARTE, Conspect. Av., i, 1850, 306. —COUES, Key N. Am. Birds, 1872, 106, part. —CORY, List Birds W. I., 1885, 8.
- [*Sciurus*] *noveboracensis* MAXIMILIAN, Journ. für Orn., 1858, 124, part (Ohio, etc.). —BOIES, Cat. Birds South Mich., 1875, no. 42 (breeding). —RIDGWAY, Man. N. Am. Birds, 1887, 519.
- Sciurus noveboracensis* SCLATER and SALVIN, Ibis, 1859, 10 (Belize, British Honduras). —NEWTON (A. and E.), Ibis, 1859, 142 (St. Croix). (?) SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz). —SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 145, part.
- (?) [*Sciurus*] *noveboracensis* NELSON, Bull. Essex Inst., viii, 1876, 100, 152 (n. e. Illinois, a few breeding).
- [*Sciurus*] *noveboracensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part *Sciurus noveboracensis* GENTRY, Life-Hist. Birds E. Penn., 1876, 142.

- Enicocichla noveboracensis* KNEELAND, Proc. Bost. Soc. N. H., vi, 1857, 233.—  
BREWER, Proc. Bost. Soc. N. H., vii, 1860, 306 (Cuba).  
[*Enicocichla*] *noveboracensis* GRAY, Hand-list, i, 1869, 249, no. 3611.  
*Henicocichla noveboracensis* CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 666; (?) Journ. für Orn., 1860, 324 (COSTA RICA).—GUNDLACH, Journ. für Orn., 1855 471 (Cuba); 1861, 326, 407 (do.).—SCLATER, Proc. Zool. Soc. Lond., 1861, 70 (Jamaica); Cat. Am. Birds, 1862, 25, part (Jamaica; Tobago). ALBRECHT, Journ. für Orn., 1862, 192 (Jamaica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 346 (Lion Hill, Panama R. R.); 1868, 627 (Venezuela); 1869, 251 (Maruaria, n. of Lake Valencia, Venezuela); 1870, 836 (San Pedro, Honduras).—SALVIN, Proc. Zool. Soc. Lond., 1870, 183 (Calovevora, Veragua).—SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 583 (St. Bartholomew).  
*H[enicocichla] noveboracensis* CABANIS, Mus. Hein., i, 1850, 16 (Venezuela).  
[*Motacilla*] *novæboracensis* TURTON, Syst. Nat., i, 1800, 589.  
*Turdus (Seiurus) novæboracensis* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 402, part.  
*Seiurus novæboracensis* AUDUBON, Synopsis, 1839, 93, part; Birds Am., oct. ed., iii, 1841, 37, pl. 49, part.  
*Seiurus novæboracensis* PUTNAM, Proc. Essex Inst., i, 1856, 209.  
[*Motacilla tigrina*]  $\beta$ . GMELIN, Syst. Nat., i, pt. 2, 1788, 985 (based on *Figuier brun de S. Domingue*, *Ficedula dominicensis fusca*, Brisson, Orn., iii, 513, pl. 28, fig. 5).  
[*Motacilla tigrina*] 2. TURTON, Syst. Nat., i, 1800, 606.  
[*Sylvia tigrina*]  $\beta$ . LATHAM, Index Orn., ii, 1790, 537.  
*Turdus aquaticus* WILSON, Am. Orn., iii, 1811, 66, pl. 23, fig. 5.—STEPHENS, Shaw's Gen. Zool., x, 1817, 183.—AUDUBON, Orn. Biog., v, 1839, 284, pl. 433, fig. 7.  
(?) *Seiurus aquaticus* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 229, part?—(?) SWAINSON, Classif. Birds, ii, 1837, 247, part.  
*Turdus aquatius* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 34.  
*Sylvia anthoides* VIEILLOT, Nouv. Dict. d'Hist. Nat., x, 1817, 208; Enc. Méth., ii, 1823, 421.  
[*Curruca*] *anthoides* LESSON, Traité d'Orn., 1831, 418.  
*Turdus motacilla* (not of Vieillot) BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 35.  
*Seiurus sulfurascens* D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 57, pl. 6 (Cuba).  
[*Seiurus*] *sulfurascens* LESSON, Descr. Mam. et Ois., 1847, 295, in text.  
*Seiurus sulphurascens* BONAPARTE, Consp. Av., i, 1850, 306.  
*E[nicocichla] sulphurascens* GRAY, Gen. Birds, i, 1848, 188.  
*Henicocichla sulphurascens* GUNDLACH, Journ. für Orn., 1855, 471 (Cuba) 1861 407 (do.).  
*Anthus l'herminieri* LESSON, Rev. Zool., ii, Apr., 1839, 101 (Colombia?; coll. Mus. Rupifortensis).  
*Seiurus l'herminieri* LESSON, Descr. Mam. et Ois., 1847, 295 ("Mexique").  
*Anthus herminieri* BONAPARTE, Consp. Av., i, 1850, 249 (Colombia).  
*Seiurus gossii* BONAPARTE, Consp. Av., i, 1850, 306 (Jamaica).  
(?) [*Seiurus*] *guadelupensis* LESSON, Descr. Mam. et Ois., 1847, 295, in text (*nomen nudum!*).

## SEIURUS NOVEBORACENSIS NOTABILIS Ridgway.

## GRINNELL'S WATER-THRUSH.

Similar to *S. n. noveboracensis*, but larger, especially the bill; coloration of upper parts less olive (more grayish sooty), that of under



parts less yellowish, usually white, with little if any yellow tinge. Young much darker above than that of *S. n. noveboracensis*, the feathers entirely dusky (except the buffy tip), instead of olive with a subterminal bar of dusky.<sup>1</sup>

*Adult male.*—Length (skins), 130.8–148.3 (139.6); wing, 73.6–81.3 (77.3); tail, 50.8–57.1 (53.4); exposed culmen, 12.4–16 (13.6); tarsus, 20–22.3 (21.6); middle toe, 12.7–14.2 (13.7).<sup>2</sup>

*Adult female.*—Length (skins), 127.2–152.1 (139.2); wing, 73.1–79 (75.7); tail, 48.8–57.9 (53.3); exposed culmen, 12.2–14.2 (13.2); tarsus, 21.1–22.3 (21.8); middle toe, 12.4–13.7 (13.2).<sup>3</sup>

Western North America; breeding from Minnesota (north of Red Wing), western Nebraska (Sioux County), and probably the more northern Rocky Mountain districts of the United States to Alaska (whole of wooded districts), and East Cape, Siberia; southward during migration throughout western United States (including Mississippi Valley), more rarely through Atlantic coast States (New Jersey, District of Columbia, Virginia, South Carolina, Florida, etc.), to the Bahamas (New Providence Island, February), Cuba (Santiago, November 18), island of Old Providence, Caribbean Sea, Cozumel Island, Yucatan, through Mexico and Central America<sup>4</sup> to Colombia (Chiriqui, province of Santa Marta, February), and to Cape St. Lucas.

(?) *Seiurus tenuirostris* SWAINSON, Philos. Mag., n. s., i, 1827, 360 (Mexico)

*Seiurus tenuirostris* GAMBEL, Proc. Ac. Nat. Sci. Phila., i, 1843, 261 (Colorado R.

*Seiurus noveboracensis* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 261, part (Vermillion R.), Cat. N. Am. Birds, 1859, no. 187, part, Review Am. Birds, 1865, 215, part (Yukon R., Fort Norman, Fort Peels R., Fort Simpson, and Fort Rae, arctic Am., Hellgate, Idaho, Camp Moogie, Washington). HAYDEN, Trans. Am. Philos. Soc., xii, 1862, 160 (upper Missouri R.). — BLAKISTON, Ibis, 1862, 4 (Saskatchewan); 1863, 62 (Fort Carlton, British North America). — DALL and BANNISTER, Trans. Chicago Ac. Sci., i, 1869, 278 (Fort Yukon,

<sup>1</sup> With only one specimen of the young of each form I can not be sure that the differences, as stated above, are constant.

<sup>2</sup> Thirteen specimens.

<sup>3</sup> Nine specimens.

Mississippi Valley specimens average smaller than those from the Rocky Mountains and westward, and are really intermediate in size between *S. n. notabilis* and *S. n. noveboracensis*. Average measurements are as follows:

Locality	Wing	Tail	Ex- posed culmen	Tarsus	Middle toe
Six adult males from Rocky Mountains, etc.	79.3	55.7	13.2	21	13.9
Seven adult males from Mississippi Valley	76.7	51.5	13.3	21.8	13.6

<sup>4</sup> Mexican and Central American localities represented among the specimens examined are the following: Oaxaca (Tapana, April 15); British Honduras (Belize, December 14); Nicaragua (Greytown, February 5); Veragua (Caloveyora). Although occurring in winter at the Cape district of Lower California (San Pedro, March 14; La Paz, February 24), I have no record of its occurrence in California.

- Alaska, breeding). (?) SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 547 (Orizaba, etc., Vera Cruz, winter).—COUES, Check List, 1873, no. 93, part, Birds N. W., 1874, 71, chiefly.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 283 ALLEN, Proc. Bost. Soc. N. H., xvii, 1874, 52 (North Dakota). HENSHAW, Zool. Exped. W. 100th Merid., 1875, 204 (Denver, Colorado, May 12; near Camp Crittenden, Arizona, Aug.). (?) LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 14 (Tapana, Oaxaca, Apr.).—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 204 (Yukon Valley, to mouths of Yukon).—TOWNSEND, Auk, iv, 1887, 13 (Kowak R., n. w. Alaska).—(?) COOKE, Bird Migr. Miss. Val., 1888, 256 (Illinois).
- S[ciurus] noveboracensis* MAXIMILIAN, Journ. für Orn., 1858, 124, part (Columbia R., etc.).
- [*Sciurus*] *noveboracensis* COUES, Key N. Am. Birds, 1872, 106, part.
- (?) *Sciurus noveboracensis* SCLATER and SALVIN, Ibis, 1859, 10 (Belize, British Honduras).—SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 51 (San José, Costa Rica).
- Sciurus noveboracensis* DRESSER, Ibis, 1865, 477, part (San Antonio, Texas, Dec.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 145, part.
- [*Sciurus*] *noveboracensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 8, part.
- Sciurus* (typographical error) *noveboracensis* HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873, 1874, 59 (Denver, Colorado, May 12).
- (?) *Hemicocichla noveboracensis* SCLATER, Cat. Am. Birds, 1862, 25, part (Guatemala).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 836 (San Pedro, Honduras).—PALMEN, Vega-Exp., 1887, 274 (Tschutpa, East Cape, Siberia, June 14, 1879).
- Sciurus noveboracensis* COUES, Proc. Ac. Nat. Sci. Phila., xviii, 1866, 71 (Fort Whipple, Arizona).
- Sciurus aquaticus* (not *Turdus aquaticus* WILSON) SWAINSON, Fauna Bor.-Am., ii, 1831, 229, part, pl. 43 (Carlton House, British America).
- Sciurus neryus* (not *Molartia nerya* Boddaert) COUES, Birds Col. Val., 1878, 299, part; Check List, 2d ed., 1882, no. 137, part.—MINOT, Bull. Nutt. Orn. Club, v, 1890, 227 (Boulder, Nederland, etc., Colorado, May).—BREWSTER, Bull. Nutt. Orn. Club, vii, 1882, 138 (Tucson, Arizona, May 4; crit.).
- Sciurus neryus notabilis* RIDGWAY, Proc. U. S. Nat. Mus., iii, March 27, 1880, 12 (Black Hills, Wyoming; coll. G. B. Grinnell; ex "Grinnell, MS."); Nom. N. Am. Birds, 1881, no. 116a.—COUES, Check List, 2d ed., 1882, no. 137.—BELDING, Proc. U. S. Nat. Mus., v, 1883, 536 (La Paz, Lower California, winter, 2 specs.).
- S[ciurus] n[eryus] notabilis?* COUES, Key N. Am. Birds, 2d ed., 1884, 309.
- Sciurus noveboracensis notabilis* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 354; 564 (Cozumel I., Yucatan); Orn. Illinois, i, 1889, 162.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 675a.—COBY, Auk, iv, 1887, 180 (Old Providence I., Caribbean Sea), Cat. W. I. Birds, 1892, 119 (New Providence, Bahamas).—SCOTT, Auk, v, 1888, 35 (Catalina Mts., Arizona, Sept.); vii, 1890, 314 (Garden Key, Tortugas, Florida, 2 specs., Mar. 26, 28).—LOOMIS, Auk, v, 1888, 324 (near Chester, South Carolina, Apr. 28, 1888); viii, 1891, 71 (Chester Co., South Carolina, Apr. 28 to May 28; Sept. 1-29).—SMITH and PALMER, Auk, v, 1888, 148 (Virginia, near Washington, District of Columbia, 2 specs., May).—COOKE, Bird Migr. Miss. Val., 1888, 256 (dates of migr.).—GOSS, Hist. Birds Kansas, 1891, 574 (rare migrant).—SOUTHWICK, Auk, ix, 1892, 303 (Raritan, New Jersey, 1 spec., May 30).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 464 (Rio Escondido, Nicaragua, Sept. to May).—FISHER (A. K.), N. Am. Fauna, no. 7, 1893, 122 (lower Santa Clara Valley, Utah, May 11).—THORNE, Auk, xii, 1895, 218 (Fort Keogh, Montana,

1 spec., Sept. 12).—ROBERTS, Auk, xvi, 1899, 241, in text (Minnesota, from Red Wing northward, in summer).—BANDS, Proc. Biol. Soc. Wash., xiii, 1899, 105 (Chirua, Santa Marta, Columbia, Feb. 7).—BISHOP, N. Am. Fauna, no. 19, 1900, 91 (Sixty-mile Creek, etc., Alaska).—BRUNER, Proc. Nebr. Orn. Un., 2d ann. meet., 1901, 57 (Sioux Co., w. Nebraska, breeding).  
*S[ciurus] noreboracensis notabilis* RIDGWAY, Man. N. Am. Birds, 1887, 519.

#### Genus TERETISTRIS Cabanis.

*Teretistris*<sup>1</sup> CABANIS, Journ. für Orn., iii, Nov., 1855, 476, in text. (Type, *Anabates fernandina* Lembeye.)

*Teretristis* BAIRD, Review Am. Birds, Apr., 1865, 233.

Rather small terrestrial Mniotiltidae with rictal bristles obsolete, wing-tip shorter than exposed culmen, commissure equal to or longer than middle toe with claw, maxilla strongly decurved, and the ninth primary shorter than the first; the plumage plain gray above (pileum and hindneck olive-green in one species), the under parts plain yellow, or whitish with yellow throat.

Bill nearly as long as head, the maxilla strongly decurved terminally, rather acute at tip, without subterminal tomial notch; mandibular tomium slightly convex, more decidedly arched subbasally, the rictal portion of the commissure decidedly and rather abruptly deflexed; gonys nearly straight, decidedly shorter than distance from nostril to tip of maxilla. Nostril wholly exposed, longitudinal, narrowly oval, with broad superior membrane. Rictal bristles obvious but very weak. Wing moderate, very much rounded (seventh and sixth primaries longest, ninth shorter than first, and eighth shorter than fifth); wing-tip shorter than exposed culmen. Tail slightly shorter than



## TERETISTRIS FERNANDINÆ (Lembeye).

## FERNANDINA'S WARBLER.

*Adults (sexes alike).*—Pileum and hindneck uniform yellowish olive-green; lores (except lower portion), orbital ring, malar region, chin, and throat, clear yellow (between lemon and canary), the auricular region and suborbital region, similar but tinged with olive-green; back, scapulars, wing-coverts, tertials, rump, and upper tail-coverts plain gray (between slate-gray and mouse gray), the remiges (except tertials) and rectrices darker, with lighter gray edgings; breast pale gray or grayish white, shading into more pronounced gray on sides and flanks; abdomen and anal region yellowish white; under tail-coverts pale grayish; axillars pale gray or grayish white; under wing-coverts white, those along edge of wing tinged with yellow; maxilla dusky with paler tomia; mandible paler (light bluish gray in life); iris brown; legs and feet grayish black in dried skins, light grayish blue in life.<sup>1</sup>

*Adult male.*—Length (skins), 120.4–125.5 (122.2); wing, 54.1–60.4 (58.2); tail, 48.3–51.6 (50.4); exposed culmen, 12.7–13.2 (12.9); tarsus, 18.3–19.3 (19); middle toe, 11.2–11.9 (11.7).<sup>2</sup>

*Adult female.*—Length (skins), 108.2–119.9 (116.1); wing, 53.8–55.4 (54.9); tail, 48–51.6 (49.8); exposed culmen, 11.7–12.7 (12.4); tarsus, 18.3–19.3 (18.8); middle toe, 10.9–11.4 (11.2).<sup>3</sup>

Western Cuba, including Isle of Pines.

*Anabates fernandinæ* LEMBEYE, Aves de la Isla de Cuba, 1850, 66, pl. 5, fig. 2.—GUNDLACH, Journ. Bost. Soc. N. H., vi, 1853, 317 (descr. eggs).

*Teretistris fernandinæ* CABANIS, Journ. für Orn., iii, Nov., 1855, 475.—BREWER, Proc. Bost. Soc. N. H., vii, 1860, 307.—GUNDLACH, Journ. für Orn., 1861, 326; 1872, 418; Repert. Fisico-Nat. Cuba, i, 1865, 236.—CORY, Auk, iii, 1886, 45; Birds W. I., 1889, 59; Cat. W. I. Birds, 1892, 18, 119, 129 (Cuba; Isle of Pines).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 368, pl. 12, fig. 1 (San Cristobal, Cuba).

[*Teretistris*] *fernandinæ* CORY, List Birds W. I., 1885, 9.

*Teretristis fernandinæ* BAIRD, Review Am. Birds, 1865, 234 (Fermina, w. Cuba).

[*Teretristis*] *fernandinæ* SCLATER and SALVIN, Nom. Av. Neotr. 1873, 11.

[*Icteria*] *fernandinæ* GRAY, Hand-list, i, 1869, 384, no. 5825.

*Helmitherus blanda* (not of Lichtenstein, fide Cabanis) BONAPARTE, Consp. Av., i, Apr., 1850, 314 (Cuba).

[*Geothlypis*] *fernandinæ* PALMER (W.), Auk, xvii, July, 1900, 217.

## TERETISTRIS FORNSI Gundlach.

## FORNS' WARBLER.

*Adults (sexes alike).*—Upper parts, including pileum and hindneck, plain gray,<sup>4</sup> becoming more brownish gray or smoke gray on rump and upper tail-coverts; sides of head, chin, throat, chest, breast, and ante-

<sup>1</sup> According to J. H. Riley.

<sup>2</sup> Five specimens.

<sup>3</sup> Four specimens.

<sup>4</sup> Between mouse gray and gray no. 6.

rior portion of sides, clear canary or light lemon yellow, the auricular region slightly tinged with olive-green; a distinct orbital ring of rather lighter yellow; abdomen white or yellowish white, the flanks and posterior portion of sides olive-grayish; under tail-coverts light grayish; axillars and under wing-coverts white, tinged with yellow; maxilla dusky with paler tomia, mandible paler (light grayish blue in life?); iris brown?; legs and feet grayish dusky (light grayish blue in life?).

*Adult male*.—Length (skins), 118–125 (120.7); wing, 55–59.5 (56.5); tail, 52–55 (53.2); exposed culmen, 12–12.5 (12.4); tarsus, 18–20 (19); middle toe, 12.<sup>1</sup>

*Adult female*.—Length (skins), 112–118 (115); wing, 56–58 (57); tail, 52–55 (53.5); exposed culmen, 12; tarsus, 18–19.5 (18.7); middle toe, 11–11.5 (11.2).<sup>1</sup>

#### Eastern Cuba.

*Teretutris forsteri* GUNDLACH, Ann. Lyc. Nat. Hist. N. Y., vi, 1858, 274 (eastern portion of Cuba); Journ. für Orn., 1861, 326; 1862, 177; 1872, 418, Rept. Fisch.-Nat. Cuba, i, 1865, 236.—ALBRECHT Journ. für Orn., 1861, 21;—CORY, Auk, iii, 1886, 45; Birds W. I., 1889, 59; Cat. W. I. Birds, 1892, 18, 119 (e. Cuba).—SHARPE, Cat. Birds Brit Mus. x, 1885, 368, pl. 12, fig. 2 (Monte Verde, Cuba).

[*Teretutris*] *forsteri* CORY, List Birds W. I., 1885, 9.

*Teretutris forsteri* CORY, Cat. W. I. Birds, 1892, 129.

*Teretutris forsteri* BAIRD, Review Am. Birds, 1865, 235 (Monte Verde, e. Cuba).

[*Teretutris*] *forsteri* SCLATER and SALVIN, Nom. Av. Neotr. 1873, 11.

[*Icteria*] *forsteri* GRAY, Hand-list, i, 1869, 384, no. 5826.

[*Ceothlyps*] *forsteri* PALMER (W.), Auk, xvii, July, 1900, 217.

#### Genus LEUCOPEZA Sclater.

*Leucopeza* SCLATER, Proc. Zool. Soc. Lond., Jan. 4, 1876, 14. (Type, *L. semperi* Sclater.)

Terrestrial or subterrestrial Mniotiltidae with bill nearly as long as head; tarsus more than one-third as long as wing; tail much shorter than wing, much rounded; coloration very plain—brownish gray above, pale gray or grayish white beneath.

Bill nearly as long as head, moderately slender, gradually tapering both laterally and vertically, the culmen straight to near tip where gradually and slightly decurved; maxillary tomium with subterminal notch rather distinct. Rictal bristles obsolete. Wing moderate: eighth, seventh, and sixth primaries longest, ninth longer than third; wing-tip about equal to distance from nostril to tip of maxilla. Tail shorter than distance from bend of wing to tips of secondaries, much rounded (graduation less than length of gonys), the rectrices broad and rather soft. Tarsus more than one-third as long as wing, much longer than middle toe with claw; basal phalanx of middle toe united for slightly more than half its length to outer toe, for slightly less than half to inner toe.

<sup>1</sup> Four specimens.

*Coloration*.—Plain brownish gray above, grayish white beneath, shading into light brownish gray laterally; sexes alike.

*Nidification*.—Unknown.

*Range*.—Island of Santa Lucia, Lesser Antilles. (Monotypic.)

### LEUCOPEZA SEMPERI Sclater.

#### SEMPER'S WARBLER.

*Adults (sexes alike)*.—Above uniform blackish slate, gradually fading into pale gray (no. 7 to no. 9) on chin, throat, and chest, the breast and abdomen still paler, or dull whitish, tinged with buff; sides and flanks slate-gray; under tail-coverts mouse gray or smoke gray, more or less tinged with brownish buffy; maxilla brownish black or dusky brown, with paler tomia; mandible similar, but paler or browner; iris brown;<sup>1</sup> legs and feet pale yellowish brown in dried skins (whitish in life).<sup>1</sup>

*Immature*.—Similar to adults, but more or less tinged or washed with olive-brown on upper parts (at least on rump, upper tail-coverts, and tail) and with brownish buff on lower parts.

*Adult male*.—Length (skins), 135–140 (137.5); wing, 67–71 (69); tail, 52; exposed culmen, 16; tarsus, 22–25 (23.5); middle toe, 13–16 (14.5).<sup>2</sup>

*Adult female*.—Length (skins), 125–142 (136); wing, 62–67 (64.3); tail, 49–53 (51.3); exposed culmen, 15–16 (15.3); tarsus, 22–23 (22.3); middle toe, 14.<sup>3</sup>

Island of Santa Lucia, Lesser Antilles.

*Leucopezia semperi* SCLATER, Proc. Zool. Soc. Lond., 1876, 14, pl. 2 (Santa Lucia, W. I.; coll. P. L. Sclater); 1889, 395.—LAWRENCE, Ann. N. Y. Acad. Sci., 1878, 151.—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 166.—CORY, Auk., iii, 1886, 40; Birds W. I., 1889, 54; Cat. W. I. Birds, 1892, 18, 119, 133.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 228, 638.—RIDGWAY, Proc. U. S. Nat. Mus., xii, 1889, 129 (Port Castries, Santa Lucia).

[*Leucopezia*] *semperi* CORY, List Birds W. I., 1885, 8.

### Genus MICROLIGEA Cory.

*Ligea* (not of Dybowski, 1876) CORY, Auk, i, Jan., 1884, 1. (Type, *L. palustris* Cory.)

*Ligia* (emendation; not of Fabricius, 1798, nor Dupré, 1829) SHARPE, Cat. Birds Brit. Mus., x, 1885, 349.

*Microligea*<sup>4</sup> CORY, Auk, i, July, 1884, 290. (Type, *Ligea palustris* Cory.)

Medium sized terrestrial Mniotiltidæ with the commissure shorter than middle toe with claw but longer than middle toe without claw; coloration very plain, the upper parts olive-green, becoming slate-gray on pileum and hindneck, under parts pale gray laterally, whitish medially.

<sup>1</sup> H. Selwyn Branch, manuscript.

<sup>2</sup> Two specimens.

<sup>3</sup> Three specimens, two of them doubtfully determined.

<sup>4</sup> “*Μικρος, Αιγεια*, in the sense of little wood-nymph.”

having the black on the forehead very narrow and that of the auric region more restricted. Both of these species, however, have outermost primary longer than the second (sometimes longer than fourth), and the tail shorter than the wing, though longer than the tert from the bend to the tips of the secondaries.

The geographic variations in *G. trichas* are difficult to understand satisfactorily, largely from lack of necessary material. Most of specimens contained in collections were taken during the seasonal migration, and therefore it is in many cases impossible to determine whether certain specimens would have remained to breed in the localities where they were secured, specimens which would undoubtedly migrate farther northward to their summer home often lingering in a southern locality until the birds there resident have commenced to breed. The chief difficulty is with the birds of this species in the Pacific coast district, where four subspecies have been supposed to occur, three of which I have been able to verify, but in the case of the fourth I have only been able to determine with any degree of accuracy its breeding range. Some of the geographic forms of the species are very strongly marked subspecies, while others are very slightly differentiated: in fact they might more properly be termed "subraces" than subspecies, and would, in the case of two of them at least, hardly be worth recognizing by name were not their respective ranges separated by many hundreds of miles, the intervening territory being occupied by a form which, instead of being intermediate in its character, is as different from either of the forms on opposite sides as these are from one another. With the exception of these extreme western forms, of which only two are strongly characterized, the extent and character of geographic variation is very evident when a sufficient



specimens that I have seen which seem without doubt referable to this form are from certain islands of the Bahama group.

(2) *Geothlypis trichas ignota*. This is the southern coast form, whose breeding range extends from the Dismal Swamp, in southeastern Virginia, to Cape Florida, and westward along the Gulf coast at least to Louisiana, probably to eastern Texas. This is much the darkest of all, has the wing more rounded, and is the only one in which the length of the tail is nearly (sometimes quite) equal to that of the wing.

(3) *Geothlypis trichas brachidactyla*.—The northern and trans-Alleghenian form, somewhat intermediate in coloration between *G. t. trichas* and *G. t. ignota*, but clearly distinct from either. With about the same size as *G. t. ignota*, but with the tail relatively much shorter, it is otherwise more like *G. t. trichas*, but has the under parts mostly yellow and the upper parts a more decided olive-green. The alleged difference in the wing-formula between this subspecies<sup>1</sup> and *G. t. trichas* I have not been able to verify. This form is first met with as a probable or possible summer resident in northern New Jersey and on Long Island, whence it extends northward, to the exclusion of *G. t. trichas*, and from the New England States and maritime British Provinces westward to eastern North Dakota, and thence southward throughout the Mississippi Valley, east of the Great Plains, breeding over the whole of this extensive area, and migrating southward through eastern Mexico and Central America as far as Costa Rica, as well as through the exclusive summer habitat of *G. t. trichas*, along the Atlantic seaboard, to certain of the West Indies and other islands of the Caribbean Sea.

(4) *Geothlypis trichas occidentalis*.—The arid region form, which agrees in size, brighter olive green of upper parts, and greater extension of yellow on the under surface with *G. t. brachidactyla*, but differs from that, as well as from the other two eastern forms, in having the post-facial band white instead of light gray, and the yellow of the under parts of a warmer or more orange hue. The range of this well-marked subspecies begins at the western limit of that of *G. t. brachidactyla* (somewhere about the middle of the Great Plains) and extends westward to the Pacific coast in southern California and northern Lower California, and from the northern boundary of the United States to northern Mexico. I am unable to trace it farther southward in winter than Cape St. Lucas and the State of Sinaloa in western Mexico.

(5) *Geothlypis trichas arizela*. The Pacific coast form, replacing *G. t. occidentalis* from Los Angeles County, California, to British Columbia. Very similar to *G. t. occidentalis* in coloration, but with the bill much smaller (exposed culmen very rarely 11 mm., the minimum length in *G. t. occidentalis*), the whitish post-facial band averaging narrower, and the general coloration less intensified. This form

<sup>1</sup> See William Palmer, Auk, xvii, 1900, 226, 227.

extends in winter to Cape St. Lucas, but is mainly resident, at least in the more southern parts of its range.

(6) *Geothlypis trichas sinuosa*.—A small form (slightly smaller even than *G. t. trichas*), apparently confined to the salt marshes about San Francisco Bay. The coloration is essentially identical with that of *G. t. arizela*, but slightly darker, especially on the upper parts and flanks.

(7) *Geothlypis trichas modesta*.—The resident form of western Mexico (States of Sinaloa, Jalisco, and Colima and Territory of Tepic). This form is practically identical with *G. t. arizela* in coloration and general dimensions, but has the bill much larger (about the same size as in *G. t. occidentalis*), and would hardly be recognized by name were it not for the fact that it has a definite range far removed from that of *G. t. arizela*, the much more brightly colored *G. t. occidentalis* coming between the two.

(8) *Geothlypis trichas melanops*.—This is the subspecies of eastern Mexico, and is evidently an offshoot from *G. t. occidentalis*, from which it differs in larger size, in having the under parts entirely rich yellow, and the white post-facial band broader and somewhat tinged with yellow on its lateral branches. Some specimens from Chihuahua, northern Mexico, are clearly intermediate between this very strongly marked subspecies and *G. t. occidentalis*.

*Geothlypis beddingi*, of the Cape St. Lucas district, and the several forms peculiar to the Bahama Islands are evidently derived from the same "original stock" as the forms of *G. trichas*, but being no longer connected by intermediates may be considered specifically distinct. All these are much larger than any of the *G. trichas* group. *G. beddingi*

that found on Eleuthera (*G. coryi*) and one of those found on Abaco (*G. tanneri*), but are nevertheless recognizably different. That found on Andros (*G. exigua*) resembles the second Abaco form (*G. incompta*), but is smaller.

Were each of these seven insular forms peculiar to a separate island they might easily be considered local subspecies of one specific type; but the fact that three of them inhabit a single small island and are said to have very distinct habitats and notes, while two others inhabit another island, renders such a view of their relationship untenable. For the present, or until we know more about these puzzling Bahama forms, probably the safest course would be to consider them all as distinct species; at the same time their characters suggest that their status might perhaps be more correctly indicated by the following nomenclature:

1. *Geothlypis rostrata*. New Providence.
2. *Geothlypis tanneri tanneri*. Abaco.
3. *Geothlypis tanneri maynardi*. New Providence.
4. *Geothlypis incompta incompta*. Abaco.
5. *Geothlypis incompta exigua*. Andros.
6. *Geothlypis coryi coryi*. Eleuthera.
7. *Geothlypis coryi flavida*. New Providence.

Whatever the facts may be, however, the case is an excellent illustration of the difficulties in the way of determining the rank of insular forms, and should be carefully considered by those who would apply the same criteria to insular as to continental forms.

#### KEY TO THE SPECIES AND SUBSPECIES OF GEOTHTYPIB.

- a. Forehead and sides of head (loral, orbital, auricular, and malar regions<sup>1</sup>) black.  
(Adult males.)
- b. Tail not much, if any, longer than wing (usually decidedly shorter).
- c. A distinct light gray, whitish, or yellow space immediately behind the black "mask;" outermost (ninth) primary longer than first.
- d. Band across crown (immediately behind black frontal patch) gray or white, sometimes tinged with yellow, but never clear yellow; feathers of crown and occiput gray beneath surface.
- e. Smaller (wing not exceeding 60, usually much less, or else culmen less than 12). (Continental forms: *Geothlypis trichas*.)
- f. Post-facial space gray. (Eastern forms.)
- g. Coloration paler, the back, etc., light grayish olive-green, the crown, (except anteriorly) and occiput grayish brown or olive, the flanks light buffy grayish or brownish; wing more pointed, the outermost (ninth) primary usually equal to or longer than fourth; tail relatively shorter, usually decidedly shorter than wing.

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<sup>1</sup> In the two exclusively South American species, *G. velata* and *G. equinoctialis*, the malar region is yellow, like the under parts.



- k. Smaller (wing averaging 52.9, tail 49.3, exposed culmen 10.5); paler, with yellow of under parts usually confined to throat, chest, breast and under tail-coverts, the back, etc., more grayish. (Middle portion of Atlantic coast district; Bahamas in winter.)

*Geothlypis trichas trichas*, adult male (p. 661)

- kk. Larger (wing averaging 55.1, tail 49.2, exposed culmen 11.4); deeper colored, the yellow of under parts usually covering most of the under surface, the back, etc., more decided olive-green. (Northern New Jersey, Long Island, New England States and maritime British Provinces westward to eastern North Dakota and Manitoba, and southward through Mississippi Valley, east of the Great Plains; in winter to Bahamas, Cuba, Jamaica, Porto Rico, and Swan Island, and through eastern Mexico and Central America to Costa Rica.)

*Geothlypis trichas brachidactyla*, adult male (p. 664)

- gg. Coloration darker, the back, etc., deep olive-green, the crown (except anteriorly) and occiput olive-brown, the flanks deep buffy olive; wing more rounded, the outermost (ninth) primary usually shorter than second; tail relatively longer, nearly (sometimes quite) equal in length to wing. (Southern coast district of eastern United States, from southeastern Virginia to Florida and eastern Texas.)

*Geothlypis trichas ignota*, adult male (p. 667)

- ff. Post-facial band white or grayish white. (Western forms.)

- g. Under parts of body partly buffy whitish, at least the lower abdomen; smaller (wing and tail averaging less than 60).

- h. Larger (wing averaging more than 55, tail more than 50); color of upper parts and flanks paler.

- i. Larger (wing averaging 57.5, tail 55.8); coloration brighter, with yellow of under parts usually more orange. (Western United States, from western portion of Great Plains to southern California, northern Lower California, and northern Mexico.)

*Geothlypis trichas occidentalis*, adult male (p. 683)



*gg.* Smaller (wing averaging less than 62, tail 56, tarsus less than 22); gray of crown duller and more restricted.

*h.* Wing larger (averaging 61), bill larger (exposed culmen averaging 15.7); yellow of under parts duller, the back, etc., more grayish olive-green. (Abaco Island, Bahamas.)

***Geothlypis incompta*, adult male (p. 677)**

*hh.* Wing shorter (59), bill smaller (exposed culmen 15); yellow of under parts brighter, the back, etc., more decided olive-green. (Andros Island, Bahamas.)

***Geothlypis exigua*, adult male (p. 677)**

*ff.* Post-facial band yellow (except across crown) or tinged with yellow; back, etc., brighter olive-green; crown with gray more restricted or else tinged with yellow or olive-green; yellow of under parts deeper and brighter.

*g.* Band across crown gray, without yellow tinge; supra-auricular region more faintly yellow.

*h.* Band across crown darker or duller gray; back darker olive-green; yellow of under parts less intense; wing and tail longer (wing 67.3, tail 61). (Abaco island, Bahamas; Great Bahama island?)

***Geothlypis tanneri*, adult male (p. 676)**

*hh.* Band across forehead paler or purer gray; back more yellowish olive-green; yellow of under parts more intense; wing and tail shorter (wing averaging 64.8, tail 59.7). (New Providence island, Bahamas.) . . . . . ***Geothlypis maynardi*, adult male (p. 676)**

*gg.* Band across crown yellowish gray; supra-auricular region clear yellow.

*hh.* Smaller, with larger bill (wing averaging 62.5, tail 58.7, exposed culmen 16.2); black of forehead narrower; back, etc., clearer olive-green. (Eleuthera island, Bahamas.)

***Geothlypis coryi*, adult male (p. 677)**

*h.* Larger, with smaller bill (wing averaging 66.1, tail 61.2, exposed culmen 14.7); black of forehead broader, and color of back, etc., more golden olive-green. (New Providence island, Bahamas.)

***Geothlypis flavida*, adult male (p. 678)**

*dd.* Band across crown (immediately behind black frontal patch) clear yellow; feathers of crown and occiput yellowish beneath surface (crown and occiput wholly yellow in one species.)

*e.* Larger (wing and tail more than 61, tarsus 22.9 or more). (Cape St. Lucas district, Lower California.) . ***Geothlypis beldingi*, adult male (p. 679)**

*ee.* Smaller (wing less than 56, tail less than 55, tarsus less than 22).

*f.* Hinder crown, occiput, and hindneck brownish olive; bill smaller (exposed culmen 12). (Southern Tamaulipas, eastern Mexico.)

***Geothlypis flavovelata*, adult male (p. 680)**

*ff.* Whole crown and occiput yellow; bill larger (exposed culmen 14). (Southern Tamaulipas, eastern Mexico.)

***Geothlypis flaviceps*, adult male (p. 680)**

*cc.* No gray, white, nor yellow behind the black "mask;" outermost (ninth) primary not longer than first (except in *G. chiriquensis*?<sup>1</sup>)

*d.* Black of forehead not extending to crown; crown and occiput gray. (Chiriqui.) . . . . . ***Geothlypis chiriquensis*, adult male (p. 681)**

*dd.* Black of forehead extending at least to middle of crown; hinder crown and occiput olive-green or black.

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<sup>1</sup> This species I have not been able to examine.

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**Section 10. -**

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**Section 11. -**

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**Section 12. -**

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**Section 13. -**

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gg Under parts entirely yellow; larger (wing and tail more than 55).

*Geothlypis trichas melanops*, adult female (p. 673)

ff Larger (wing more than 57, exposed culmen not less than 12.9, usually much more)

g Bill smaller (exposed culmen 12.9-13.7)

*Geothlypis beldingi*, adult female (p. 679)

aa Bill larger (exposed culmen 14.5-15.5).

h Under parts with more or less of whitish on abdominal region, forehead and superciliary region very slightly if at all tinged with yellow

i Throat and chest pale dull yellow, or pale dull buffy tinged with yellow; back, etc., olive-gray

*Geothlypis rostrata*, adult female (p. 675)

j Throat and chest bright yellow, back, etc., grayish olive-green.

k Wing and tail longer, bill smaller (wing averaging 61.5, tail 56.9, exposed culmen 14.5); upper parts lighter olive-green, the forehead and superciliary stripe grayish, not tinged with yellow

*Geothlypis maynardi*, adult female (p. 676)

ll Wing and tail shorter, bill larger (wing 58.9, tail 55.9, exposed culmen 15.2), upper parts darker olive-green, the forehead and superciliary region tinged with yellow

*Geothlypis tanneri*, adult female (p. 676)

hh Under parts entirely yellow; forehead and superciliary region strongly tinged with yellow

*Geothlypis coryi*, adult female (p. 678)

cc Forehead and superciliary region dull yellow, strongly and abruptly contracted with olive of crown and occiput, under parts saffron yellow.

*Geothlypis flaviceps*, adult female (p. 681)

dd Sides and flanks deep olive-green, like upper parts

*Geothlypis semiflava bairdi*, adult female (p. 683)

ee Back, etc., brownish olive-green; sides and flanks reddish brown; under parts ochraceous- or fulvous- yellow

*Geothlypis speciosa*, adult female<sup>1</sup> (p. 684)

bb Tail decidedly longer than wing

*Geothlypis nelsoni nelsoni*, adult female<sup>1</sup> (p. 685)

*Geothlypis nelsoni microrhyncha*, adult female.<sup>1</sup>

## GEOTHTYPS TRICHAS TRICHAS (Linnaeus).

### MARYLAND YELLOW-THROAT

*Adult male in spring and summer.* Forehead (broadly, or to and sometimes including anterior portion of crown) with loreal, orbital, suborbital, malar, and auricular regions uniform black, forming a conspicuous "mask," this margined posteriorly by a band of light ash gray of variable width sometimes narrow and abruptly defined posteriorly, sometimes covering whole of crown; rest of upper parts plain dull grayish olive green, the occiput and hinder part of crown more or less strongly tinged with brown; chin, throat, and chest (sometimes breast also) lemon or canary yellow; under tail-coverts puler yellow; rest of under parts pale buffy or dull buffy whitish, becoming light buffy

<sup>1</sup>Adult females of *G. speciosa*, *G. nelsoni* (both subspecies), *G. trichas melanops*, *G. fluviatilis*, *G. nrompla*, *G. caryna*, and *G. fluvialis* not seen by me.

- c. Hinder crown and occiput olive-green; back, etc., bright yellowish olive-green; beneath bright lemon yellow, the sides and flanks olive-green; tail less than 50; bill stouter, the exposed culmen 13-14. (Southern Honduras to Costa Rica.)

*Geothlypis semiflava bairdi*, adult male (p. 682)

- cc. Whole pileum black; back, etc., brownish olive-green; beneath saffron yellow, the sides and flanks brownish; tail more than 55; bill more slender, the exposed culmen 12-12.7. (Southeastern Mexico.)

*Geothlypis speciosa*, adult male (p. 683)

- bb. Tail much longer than wing.

- c. Post-facial region more or less gray; bill larger (exposed culmen 11-11.5). (States of Vera Cruz and Puebla, southeastern Mexico.)

*Geothlypis nelsoni nelsoni*, adult male (p. 685)

- cc. Post-facial region olive-green, like rest of upper parts, or but slightly tinged with gray; bill smaller (exposed culmen 10). (State of Hidalgo, southeastern Mexico.) . . . . . *Geothlypis nelsoni microrhynchos*, adult male (p. 685)

- aa. No black on head. (Adult females and young.)

- b. Tail not longer than wing (usually decidedly shorter).

- c. Back, etc., clear olive-green, yellowish olive-green, or grayish olive-green. sides and flanks not reddish brown; yellow of under parts not of a fulvous or ochraceous hue.

- d. Sides and flanks not olive-green.

- e. Forehead and superciliary region not yellow; if tinged with yellow the color not strongly nor abruptly contrasted with the olive, olive-greenish, or brownish of crown and occiput; under parts not saffron yellow.

- f. Smaller (wing less than 57 or else exposed culmen less than 12.9—usually less than 55 and 12, respectively).

- g. Under part partly buffy whitish; smaller (wing and tail less than 55).

- h. Smaller (wing averaging less than 50, exposed culmen averaging not more than 10).

- i. Paler, wing averaging 49.7, tail 46.9, exposed culmen 9.7, tarsus

gg. Under parts entirely yellow, larger (wing and tail more than 55).

*Geothlypis trichas melanops*, adult female (p. 673)

ff. Larger wing more than 57, exposed culmen not less than 12.9, usually much more)

g. Bill smaller (exposed culmen 12.9-13.7).

*Geothlypis beldingi*, adult female (p. 679)

ag. Bill larger (exposed culmen 14.5-15.5)

h. Under parts with more or less of whitish on abdominal region, forehead and superciliary region very slightly if at all tinged with yellow.

i. Throat and chest pale dull yellow, or pale dull buffy tinged with yellow; back, etc., olive-gray

*Geothlypis rostrata*, adult female (p. 675)

u. Throat and chest bright yellow, back, etc., grayish olive-green.

j. Wing and tail longer, bill smaller (wing averaging 61.5, tail 56.9, exposed culmen 14.5), upper parts lighter olive-green, the forehead and superciliary stripe grayish, not tinged with yellow

*Geothlypis maynardi*, adult female (p. 676)

ii. Wing and tail shorter, bill larger (wing 58.9, tail 55.9, exposed culmen 15.2), upper parts darker olive-green, the forehead and superciliary region tinged with yellow

*Geothlypis tanneri*, adult female (p. 676)

hh. Under parts entirely yellow, forehead and superciliary region strongly tinged with yellow.

*Geothlypis coryi*, adult female (p. 678)

cc. Forehead and superciliary region dull yellow, strongly and abruptly contrasted with olive of crown and occiput, under parts saffron yellow.

*Geothlypis flaviceps*, adult female (p. 681)

dd. Sides and flanks deep olive-green, like upper parts.

*Geothlypis semiflava bairdi*, adult female (p. 683)

cc. Back, etc., brownish olive-green; sides and flanks reddish brown, under parts ochraceous- or fulvous- yellow.

*Geothlypis speciosa*, adult female<sup>1</sup> (p. 684)

hh. Tail decidedly longer than wing

*Geothlypis nelsoni nelsoni*, adult female<sup>1</sup> (p. 686)

*Geothlypis nelsoni microrhyncha*, adult female.<sup>1</sup>

## GEOTHTYPS TRICHAS TRICHAS (Linnaeus).

### MARYLAND YELLOW-THROAT

*Adult male in spring and summer.* Forehead (broadly, or to and sometimes including anterior portion of crown) with loreal, orbital, suborbital, malar, and auricular regions uniform black, forming a conspicuous "mask," this margined posteriorly by a band of light ash gray of variable width—sometimes narrow and abruptly defined posteriorly, sometimes covering whole of crown; rest of upper parts plain dull grayish olive-green, the occiput and hinder part of crown more or less strongly tinged with brown; chin, throat, and chest (sometimes breast also) lemon or canary yellow; under tail-coverts paler yellow; rest of under parts pale buffy or dull buffy whitish, becoming light buffy

<sup>1</sup> Adult females of *G. speciosa*, *G. nelsoni* (both subspecies), *G. trichas melanops*, *G. flavo-chala*, *G. incompta*, *G. cerynea*, and *G. flauda* not seen by me.

grayish brown on sides and flanks; edge of wing yellow; bill black; iris brown; legs and feet light brown (in dried skins).

*Adult male in autumn and winter.*—Similar in coloration to spring or summer specimens, but hinder crown and occiput decidedly brown, olive-green of back, etc., clearer (less grayish), and bill much lighter in color, the mandible pale brownish (flesh colored or lilaceous in life?); darker terminally, the maxilla dark brown or dusky with paler tomia.

*Adult female in spring and summer.*—Head without any black or gray; pileum grayish olive, the forehead or anterior portion of crown (sometimes both) more or less strongly tinged with cinnamon-brown; sides of head similar in color to pileum, but paler, especially on superciliary and orbital regions; otherwise similar in coloration to the adult male, but yellow of under parts paler and duller, sometimes distinct only on under tail-coverts.

*Adult female in autumn and winter.*—Similar to spring and summer specimens, but plumage softer and colors slightly deeper.

*Young male in first autumn and winter.*—Similar to the adult male of corresponding season, but black "mask" only partially developed, the pileum entirely olive-brown (or with admixture of black feathers on forehead), no gray on head, and colors generally duller, more suffused.

*Young female in first autumn and winter.*—Similar to the adult female of corresponding season, but under parts pale dull buffy or pale maize yellow (without any clear yellow), becoming brownish on sides and flanks.

*Young, first plumage (sexes alike).*—Above plain brownish olive, becoming more olive-brownish on rump and posterior middle and

gg. Under parts entirely yellow; larger (wing and tail more than 55).

**Geothlypis trichas melanops**, adult female (p. 673)

ff. Larger (wing more than 57, exposed culmen not less than 12.9, usually much more).

g. Bill smaller (exposed culmen 12.9–13.7).

**Geothlypis beldingi**, adult female (p. 679)

gg. Bill larger (exposed culmen 14.5–15.5).

h. Under parts with more or less of whitish on abdominal region; forehead and superciliary region very slightly if at all tinged with yellow.

i. Throat and chest pale dull yellow, or pale dull buffy tinged with yellow; back, etc., olive-gray.

**Geothlypis rostrata**, adult female (p. 675)

ii. Throat and chest bright yellow; back, etc., grayish olive-green.

j. Wing and tail longer, bill smaller (wing averaging 61.5, tail 56.9, exposed culmen 14.5); upper parts lighter olive-green, the forehead and superciliary stripe grayish, not tinged with yellow.

**Geothlypis maynardi**, adult female (p. 676)

jj. Wing and tail shorter, bill larger (wing 58.9, tail 55.9, exposed culmen 15.2); upper parts darker olive-green, the forehead and superciliary region tinged with yellow.

**Geothlypis tanneri**, adult female (p. 676)

hh. Under parts entirely yellow; forehead and superciliary region strongly tinged with yellow.

**Geothlypis coryi**, adult female (p. 678)

ee. Forehead and superciliary region dull yellow, strongly and abruptly contrasted with olive of crown and occiput; under parts saffron yellow.

**Geothlypis flaviceps**, adult female (p. 681)

dd. Sides and flanks deep olive-green, like upper parts.

**Geothlypis semiflava bairdi**, adult female (p. 683)

cc. Back, etc., brownish olive-green; sides and flanks reddish brown; under parts ochraceous- or fulvous- yellow.

**Geothlypis speciosa**, adult female<sup>1</sup> (p. 684)

bb. Tail decidedly longer than wing.

**Geothlypis nelsoni nelsoni**, adult female<sup>1</sup> (p. 685)

**Geothlypis nelsoni microrhyncha**, adult female.<sup>1</sup>

## GEOTHTYPIS TRICHAS TRICHAS (Linnæus).

### MARYLAND YELLOW-THROAT.

*Adult male in spring and summer.*—Forehead (broadly, or to and sometimes including anterior portion of crown) with loreal, orbital, suborbital, malar, and auricular regions uniform black, forming a conspicuous “mask,” this margined posteriorly by a band of light ash gray of variable width, sometimes narrow and abruptly defined posteriorly, sometimes covering whole of crown; rest of upper parts plain dull grayish olive-green, the occiput and hinder part of crown more or less strongly tinged with brown; chin, throat, and chest (sometimes breast also) lemon or canary yellow; under tail-coverts paler yellow; rest of under parts pale buffy or dull buffy whitish, becoming light buffy

<sup>1</sup> Adult females of *G. speciosa*, *G. nelsoni* (both subspecies), *G. trichas melanops*, *G. flavorelata*, *G. incompta*, *G. exigua*, and *G. flavida* not seen by me.

*Trichas personatus*<sup>1</sup> SWAINSON, Philos. Mag., new ser., i, 1827, 433, part; Zool. Journ., iii, 1827, 167; Isis, 1830, 1153; 1834, 785; Classif. Birds, ii, 1837, 247.—JARDINE, ed. Wilson's Am. Orn., i, 1832, 88, 303, part.

The following references I am unable, in the absence of specimens from the localities cited, to properly allocate:

*Geothlypis trichas* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 596 (Porto Rico).—GUNDLACH, Anal. Soc. Esp. Hist. Nat., vii, 1878, 187 (Porto Rico).—COAY, Bull. Nutt. Orn. Club, vi, 1881, 151 (Haiti); Birds Haiti and San Dom., 1885, 36; Auk, vi, 1889, 31 (Little Cayman); viii, 1891, 352 (Anguilla and Cay Sal, Bahamas, May); Cat. W. I. Birds, 1892, 119, part (Great Bahama, Bimini, Berry, Andros, Great Inagua, Cay Sal and Anguilla islands, Bahamas; Isle of Pines; Grand Cayman; Haiti; Porto Rico).—NORTHRUP, Auk, viii, 1891, 60 (Andros I., Bahamas).—CHERRILL, Contr. Orn. San Dom., 1896, 12 (Santo Domingo, Feb. 2 to May 8).

**GEOTHYLPIS TRICHAS BRACHIDACTYLA (Swainson).**

**NORTHERN YELLOW-THROAT.**

Similar to *G. t. trichas*, but averaging larger; adult male with under parts more extensively yellow (often almost wholly yellow) and upper parts more decidedly olive-green; adult female usually with the yellow of under parts brighter and more extended than that of *G. t. trichas*<sup>2</sup>.

*Adult male*.—Length (skins), 105–133 (112.4); wing, 51.5–59 (55.1); tail, 44–56 (49.2); exposed culmen, 10–12 (11.4); tarsus, 18.5–22 (20.5); middle toe, 12–14.5 (13.7)<sup>3</sup>.

*Adult female*.—Length (skins), 105–121 (111.3); wing, 48–54.5 (51.7); tail, 45–50 (46.8); exposed culmen, 10–11.5 (10.7); tarsus, 19–21.5 (19.9); middle toe, 12–14 (12.8)<sup>4</sup>.

<sup>1</sup>Not named as a new species, but a new specific name given to the old species.





Northeastern United States and southeastern British Provinces, from Newfoundland,<sup>1</sup> southern Labrador (Natashquan), Quebec (Point de Monts), Nova Scotia, New Brunswick, the New England States, Long Island, New York, and northern New Jersey (Englewood, Hoboken, etc.), westward to northern Ontario (Parry Sound, Muskoka, etc.), Michigan, Wisconsin, Minnesota, and eastern North Dakota (Pembina, Fort Rice, etc.), and southward through Mississippi Valley to upland districts of the Gulf States (?), and east-central Texas; in winter, Bahamas (Eleuthera, New Providence, Abaco, Salt Key, and Rum Cay islands, and Hog Island), Cuba (Remedios, Monte Verde, Palmarito, etc.), Jamaica, Porto Rico (?), Swan Island (Caribbean Sea), and through eastern Mexico, in States of Tamaulipas, Vera Cruz, Tlaxcala (Apixaco), Guanajuato (Morelia), Tabasco, and Yucatan, to Guatemala, Nicaragua (San Carlos; Los Sábalos; Sucuyá), and Costa Rica (Rio Frio; San José; Cartago); whole United States east of the Great Plains during migration.

*Sylvia trichas* (not *Turdus trichas* Linnaeus) NUTTALL, Man. Orn. U. S. and Can., i, 1832, 401, part.—AUDUBON, Orn. Biog., i, 1831, 121, part; v, 1839, 463, part. *Geothlypis trichas* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 241, part; Cat. N. Am. Birds, 1859, no. 170, part; Review Am. Birds, 1865, 220, part.—SCLATER, Proc. Zool. Soc. Lond., 1861, 70 (Jamaica); Cat. Am. Birds, 1862, 27, part (Jamaica; Tobago ?).—CABANIS, Journ. für Orn., 1861, 84 (Costa Rica).—SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz), 373 (Toton-tepec, Oaxaca); Cat. Am. Birds, 1862, 27, part (Guatemala).—VERRILL, Proc. Bost. Soc. N. H., ix, 1862, 137 (Anticosti I.).—ALBRECHT, Journ. für Orn., 1862, 192 (Jamaica).—MARCH, Proc. Ac. Nat. Sci. Phila., 1863, 293 (Jamaica).—McILWRAITH, Proc. Essex Inst., v, 1866, 85 (Hamilton, Ontario).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 94 (Costa Rica); ix, 1869, 200 (Yucatan).—FRANTZIUS, Journ. für Orn., 1869, 293 (Costa Rica).—SCLATER and SALVIN, Ibis, 1859, 10 (Dueñas, Guatemala, winter); Proc. Zool. Soc. Lond., 1870, 836 (San Pedro, Honduras).—SALVIN, Ibis, 1872, 149, part (monogr.).—COUES, Check List, 1873, no. 97, part; 2d ed., 1882, no. 141, part; Birds N. W., 1874, 74, part; Birds Col. Val., 1878, 309, part.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 297, part.—BREWSTER, Bull. Nutt. Orn. Club, iii, 1878, 62 (Upton, Maine; descr. young); Proc. Bost. Soc. N. H., xxii, 1883, 371 (Anticosti I., July).—BOUCARD, Proc. Zool. Lond., 1878, 52 (San José and Cartago, Costa Rica, Jan. to May); 1883, 441 (Chablé and Progreso, Yucatan).—CORY, Birds Bahama Is., 1880, 72, part; Auk, iii, 1886, 44, part (West Indian references); Birds W. I., 1889, 58, part; Cat. W. I. Birds, 1892, 119, part (Jamaica).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 122, part; Proc. U. S. Nat. Mus., x, 1888, 576 (Swan I., Caribbean Sea, Feb. 12); Orn. Illinois, i, 1889, 167.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 151 (chiefly).—MERRIAM, Bull. Nutt. Orn. Club, vii, 1882, 234 (Point de Monts, Quebec, rare).—STEARNS, Proc. U. S. Nat. Mus., vi, 1883, 116 (Natashquan, Labrador).—BICKNELL, Auk, i, 1884, 215 (song).—BROWNE, Auk, i, 1884, 389 (Framingham, Massachusetts, 1 spec. in Jan.).—NUTTING, Proc. U. S. Nat. Mus., vi, 1884, 398 (Los Sábalos, Nicaragua).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 351, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 681, part.—CHERRIE, A

<sup>1</sup>According to W. Palmer, Auk.

- vii, 1890, 336 (San José, Costa Rica, Mar., Apr.); ix, 1892, 21 (do.) —FAXON, Auk, vii, 1890, 409 (Cambridge, Massachusetts, Jan. 31, 1890).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 486 (Rio Escondido, Nicaragua, after Oct. 28).—NEHRLING, Our Native Birds, etc., i, 1903, 254, part, pl. 14, fig. 1.—FLKXING, Auk, xviii, 1901, 44 (Parry Sound and Muskoka, n. w. Ontario, summer resid.).
- [*Geothlypis trichas*] COUES, Key N. Am. Birds, 1872, 107, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9, part.
- G[eo]thlypis trichas* NEWTON (A. and E.), Handb. Jamaica, 1881, 106.—RIDGWAY, Man. N. Am. Birds, 1887, 523, part.
- [*Geothlypis trichas*] *a. trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.
- Geothlypis trichas* var. *trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.
- [*Geothlypis trichas*] var. *trichas* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296, part.
- [*Scozia*] *trichas* RIDGWAY, Ann. Lyc. N. Y., x, Jan., 1874, 369 (Illinois).
- Sylvia roseae* (not of Audubon) PEABODY, Orn. Mass., 1839, 313 (Massachusetts).
- Trichas marylandica* (not *Sylvia marylandica* Wilson) NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 454, part.—GOSSE, Birds Jamaica, 1847, 148.—Hoy, Proc. Ac. Nat. Sci. Phila., 1853, 311 (Wisconsin).—BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia).
- Trichas marylandica* AUDUBON, Synopses, 1839, 65, part; Birds Am., oct. ed., ii, 1841, 78, part.—WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 282 (Nova Scotia).
- Tr[ichas] marylandica* MAXIMILIAN, Journ. für Orn., 1858, 118, part (Kentucky; Texas).
- Trichas personatus* SWAINSON, Philos. Mag., new ser., i, 1827, 433, part (Veracruz, Mexico).—JARDINE, ed. Wilson's Am. Orn., i, 1832, 89, 303, part.—DENNY, Proc. Zool. Soc. Lond., 1847, 38, part (Jamaica; Cuba).—PRATTEN, Trans. Ills. Agric. Soc., i, 1855, 602 (Illinois).
- Trichas brachidactylus* SWAINSON, Anim. in Menag., 1838, 295 ("northern Provinces of United States").
- T[richas] brachidactylus* GRAY, Gen. Birds, i, 1846, 197

## GEOTHYLPIS TRICHAS IGNOTA Chapman.

## SOUTHERN YELLOW-THROAT.

Similar to *G. t. brachidactyla*, but tail relatively longer (nearly, sometimes quite, as long as wing), wing more rounded (outermost primary shorter than fourth, instead of longer), and coloration much darker; adult male with greenish olive of upper parts darker, becoming more strongly brownish on crown and occiput, where (at least in winter plumage) the color is nearly vandyke, or chocolate brown; yellow of under parts about equally extensive as in *G. t. brachidactyla*, but less pure in hue; sides and flanks darker, approaching raw umber brown.

*Adult male*.—Length (skins), 110–128 (118.1); wing, 49.5–56.5 (55.2); tail, 48–56 (53); exposed culmen, 10.2–13 (11.5); tarsus, 20–22 (20.7); middle toe, 12–14 (13.1).<sup>1</sup>

*Adult female*.—Length (skins), 112–121 (115.5); wing, 48.5–54.5 (52.2); tail, 47.5–53.5 (49.4); exposed culmen, 10–12 (11.1); tarsus, 19.5–21.5 (20.2); middle toe, 12.5–14 (12.9).<sup>2</sup>

Southern Atlantic and Gulf coast districts of United States, from southeastern Virginia (Dismal Swamp, breeding) to Florida (over whole peninsula) and westward along Gulf lowlands to eastern Texas (Caranchua Creek, Johnson County, January); winters from at least coast of South Carolina southward; also winters in Cuba (Matanzas, February; El Guama, March; San Diego de los Baños, April).

(?) <sup>3</sup>*Sylvia roscoe* AUDUBON, Orn. Biog., i, 1831, 124, pl. 24 (Mississippi).

(?) *Trichas roscoe* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 457.

<sup>1</sup> Eighteen specimens.

<sup>2</sup> Fourteen specimens.

Series from different localities average respectively as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
MALES.					
Ten adult males from Florida.....	55.4	52.5	11.4	20.9	13
Two adult males from Georgia (Liberty County).....	54.5	54	11.5	20.5	13
Two adult males from South Carolina (coast).....	54.7	53.5	11.5	20	13
Two adult males from southeastern Virginia (Dismal Swamp) .....	54.5	52.2	11	20.5	13.2
One adult male from Louisiana (New Orleans).....	56	54	13	21.5	14
One adult male from eastern Texas (Johnson County) .....	56	56	11.5	21	13
FEMALES.					
Eleven adult females from Florida.....	52.3	50.5	11.1	20.4	13.1
One adult female from Virginia (Dismal Swamp).....	52.5	47.5	11	20.5	13
Two adult females from Cuba.....	53.7	48.7	11	19.2	12.5

<sup>3</sup> While I believe there can be little doubt that Audubon figured and described an immature male of this form, it is probably best not to accept the name *roscoe*, the reason that there is now no means of proving the matter, and to accept the name *ignota* on the principle that it is never well to exchange a certainty for uncertainty.

- Geothlypis trichas roseae* HARRISBROCK, Auk, vi, Apr., 1889, 167, 168, part.—PALMER (W.), Auk, xvii, 1900, 221 (crit.); xviii, 1901, 197, in text (crit. nomencl.)
- (?) *Sylvia trichas* (not *Turdus trichas* Linnaeus) D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Ois., 1839, 67.
- (?) *Geothlypis trichas* GUNDLACH, Journ. für Orn., 1855, 472 (Cuba); 1861, 326 (Cuba); 1872, 417 (Cuba); Repert. Fisico-Nat. Cuba, i, 1865, 236; Orn. Cuba, 1873, 69.
- Geothlypis trichas* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 241, part (Cape Florida); Cat. N. Am. Birds, 1859, no. 170, part.—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269, part (e. Florida).—COMBS, Proc. Ac. Nat. Sci. Phila., 1871, 20 (Fort Macon, North Carolina, breeding; habits); Check List, 1873, no. 97, part; 2d ed., 1882, no. 141, part; Birds N. W., 1874, 74, part; Birds Col. Val., 1878, 309, part.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 297, part.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 122, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 681, part.—SCOTT, Auk, vii, 1890, 21 (Key West and Punta Rassa, Florida, winter).—WAYNE, Auk, xii, 1895, 365 (Wacissa R., n. w. Florida, breeding).
- [*Geothlypis*] *trichas* COMBS, Key N. Am. Birds, 1872, 107, part.
- [*Geothlypis*] *trichas* COMBS, Key N. Am. Birds, 2d ed., 1884, 310, part.—RIDGWAY, Man. N. Am. Birds, 1887, 523, part.
- [*Geothlypis trichas*] *α. trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.
- Geothlypis trichas* var. *trichas* RIDGWAY, Am. Jour. Sci., iv, Dec., 1872, 458, part.
- [*Geothlypis trichas*] var. *trichas* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296, part.
- Trichas marylandica* (not *Sylvia marylandica* Wilson) AUDUBON, Synopsis, 1839, 65, part; Birds Am., oct. ed., ii, 1841, 78, part.
- Trichas marylandica* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 454, part (w. Florida).
- Tr[ichas] marylandica* MAXIMILIAN, Journ. für Orn., 1858, 118, part (Florida; Louisiana).
- [*Geothlypis*] *trichas occidentalis* (not of Brewster) RIDGWAY, Man. N. Am. Birds, 1887, 523, part (Georgia).
- Geothlypis trichas occidentalis* BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 115

*Adult female.* —Length (skins), 110–121 (114.1); wing, 52–54.5 (53.4); tail, 49–53 (50.8); exposed culmen, 10.5–11 (10.9); tarsus, 19.5–21.5 (20.3); middle toe, 12.5–14 (13.3).<sup>1</sup>

Whole of arid region of western United States; east to more western portions of the Great Plains (Fort Randall, South Dakota, to San Antonio, Texas); north to Montana (Fort Custer, Fort Keogh, etc.), Idaho, and eastern Washington (?); west to southern California (Los Angeles County, etc.),<sup>2</sup> and northern Lower California; breeding southward to northern Chihuahua (San Diego) and northern Lower California (Gardner's Laguna, Salton River); southward in winter to Cape St. Lucas and Territory of Tepic, western Mexico.

*Sylvia trichas* (not *Turdus trichas* Linnæus) NUTTALL, Man. Orn. U. S. and Can., 1, 1832, 401, part.—AUDUBON, Orn. Biog., v, 1839, 463, part.  
*Geothlypis trichas* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 241, part; Cat. N. Am. Birds, 1859, no. 170, part; Review Am. Birds, 1865, 220, part.—XANTUS, Proc. Ac. Nat. Sci. Phila., 1859, 191 (Fort Tejon, California).—HENRY, Proc. Ac. Nat. Sci. Phila., 1859, 106 (New Mexico).—DRESSER, Ibis, 1865, 476 (San Antonio, Texas).—COUES, Ibis, 1865, 163, in text (Arizona); Proc. Ac. Nat. Sci. Phila., 1866, 69 (Fort Whipple, Arizona); Check List, 1873, no. 1, part; 2d ed., 1882, no. 141, part; Birds N. W., 1874, 74, part; Birds Col. Val., 1878, 309, part.—COOPER, Orn. Cal., 1870, 95, part.—SALVIN, Ibis, 1872, 149, part (monogr.).—AIKEN, Proc. Bost. Soc. N. H., xv, 1872, 197 (Colorado).—MERRIAM, Ann. Rep. U. S. Geol. Surv. for 1872 (1873), 674 (Ogden, Utah; Fort Ellis, Montana), 713 (Utah).—ALLEN, Proc. Bost. Soc. N. H., xvii, 1874, 52 (Missouri and Musselshell rivers, w. North Dakota).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 297, part.—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269, part (Mazatlan, winter).—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 204 (localities in Utah, Colorado, and Arizona).—RIDGWAY, Orn. 40th Parallel. 1877, 434 (localities in Nevada and Utah); Nom. N. Am. Birds, 1881, no. 122, part.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 150, part.—BREWSTER, Bull. Nutt. Orn.

<sup>1</sup> Eight specimens.  
Adult males from different geographic areas average, respectively, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
Three adult males from northern Chihuahua (San Diego) ..	57.3	55.5	11.8	21.5	14.5
Fourteen adult males from Arizona.....	57.7	53.9	11.2	20.9	13.6
Two adult males from western Nevada.....	60	56	11.5	21	14
One adult male from western Texas (Fort Hancock) .....	59	54	12	21	14
Three adult males from Montana and western North Dakota.	56.5	52.8	11.4	20.5	13
Six adult males from southern California.....	57.3	54.2	11.2	21	14.1
Three adult males from northern Lower California.....	56.3	53.3	11.2	20.7	13.7

<sup>2</sup>On account of lack of sufficient material I am not able to make out satisfactorily the range of this form in California. Specimens have been examined from Alhambra (April 2, September 8), Los Angeles (April 7), and Pasadena (November 23). I would also refer to this form a specimen from Stockton (April 13) and a breeding bird from Carberry's Ranch. It is possible that its range may be general throughout the valleys of California, except those of the coast district from Los Angeles County northward.

- Club, vii, 1882, 139 (Cienega Station, Arizona; crit.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 351, part.
- [*Geothlypis*] *trichas* COUES, Key N. Am. Birds, 1872, 107, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9, part.
- [*Geothlypis*] *trichas* COUES, Key N. Am. Birds, 2d ed., 1884, 310, part.
- Geothlypis trichas* MERRIAM, Ann. Rep. U. S. Geol. Surv. for 1872 (1873), 705 (Ogden, Utah, breeding).
- [*Geothlypis trichas*]  $\alpha$  *trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.
- Geothlypis trichas* var. *trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.
- [*Geothlypis trichas*] var. *trichas* RIDGWAY, in Baird, Brewer, and Ridgway's Illus. N. Am. Birds, i, 1874, 296, part.
- (?) *Trichas marylandicus* (not *Sylvia marilandica* Wilson) NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 454, part (Lewis River).—GAMBEL, Journ. Ac. Nat. Sci. Phila., i, 1847, 37, part (California).
- (?) *Trichas marylandicus* GAMBEL, Proc. Ac. Nat. Sci. Phila., iii, 1846, 155, part (California).
- Trichas marilandica* HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 309 (New Mexico).
- Trichas marilandicus* WOODHOUSE, in Rep. Sitgreaves' Expl. Zuffi and Col. R., 1853, 51, part.
- (?) *Trichas delafieldii* (not *Sylvia delafieldii* Audubon) HEERMANN, Journ. Ac. Nat. Sci. Phila., ii, 1852, 263, part (California); Rep. Pacific R. R. Surv., x, 1859, 40, part (California).
- Geothlypis trichas occidentalis* BREWSTER, Bull. Nutt. Orn. Club, viii, July, 1883, 159 (Truckee River, Nevada; coll. W. Brewster).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 681a, part.—SCOTT, Auk, v, 1888, 35 (Tucson, Arizona).—GOSS, Hist. Birds Kansas, 1891, 581, part.—MERRIAM, N. Am. Fauna, no. 5, 1891, 105 (Fort Lapwai, Idaho, breeding).—(?) ANTHONY, Auk, xii, 1895, 142 (San Fernando, Lower California).—MERRILL, Auk, xv, 1898, 19 (Fort Sherman, Idaho, breeding).—PALMER (W.), Auk, xvii, 1901, 221 (diagn.; crit.).—BATES, Proc. Nebr. Orn. Un., 2d ann. meet., 1901, 75 (Cherry Co., n. w. Nebraska, Sept. 10).
- [*Geothlypis*] *trichas occidentalis* RIDGWAY, Man. N. Am. Birds, 1887, 523, part.
- Geothlypis occidentalis* SHARP, Cat. Birds Brit. Mus., x, 1885, 351, part.

tail, 48–50 (48.9); exposed culmen, 10; tarsus, 19.5–21 (20.1); middle toe, 12–13 (12.8).<sup>1</sup>

Pacific coast district, from British Columbia southward; breeding southward to Los Angeles County, California, and eastward to Fort Klamath, Oregon; during migration to Cape St. Lucas.

*Sylvia trichas* (not *Turdus trichas* Linnæus) AUDUBON, Orn. Biog., v, 1839, 463, part (Columbia R.).—TOWNSEND, Journ. Ac. Nat. Sci., Phila., viii, 1839, 153 (Columbia R.).

*Geothlypis trichas* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 241, part (Fort Steilacoom and Shoalwater Bay, Washington); Cat. N. Am. Birds, 1859, no. 170, part; Review Am. Birds, 1865, 220, part.—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. 2, 1860, 177 (Shoalwater Bay, etc., Washington).—LORD, Proc. Roy. Artil. Inst. Woolwich, 1864, 115 (British Columbia).—BROWN, Ibis, 1868, 420 (Vancouver I.).—COOPER, Orn. Cal. 1870, 95, part.—SALVIN, Ibis, 1872, 149, part (monogr.).—COUES, Check List, 1873, no. 97, part; 2d ed., 1882, no. 141, part; Birds, N. W., 1874, 74, part; Birds Col. Val., 1878, 309, part.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 297, part.—RIDGWAY, Bull. Nutt. Orn. Club, iii, 1878, 65 (Marysville, California); Nom. N. Am. Birds, 1881, no. 122, part.—BELDING, Proc. U. S. Nat. Mus., i, 1879, 407, part (centr. California); v, 1883, 536 (La Paz, Lower California, winter).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 351, part.

[*Geothlypis trichas*] *α. trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.

*Geothlypis trichas* var. *trichas* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458, part.

[*Geothlypis trichas*] var. *trichas* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296, part.

*Trichas marylandica* (not *Sylvia marylandica* Wilson) NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 454, part (Oregon).—GAMBEL, Journ. Ac. Nat. Sci. Phila., i, 1847, 37, part (California).

*Trichas marilandica* AUDUBON, Synopsis, 1839, 65, part; Birds Am., oct. ed., ii, 1841, 78, part.

*Trichas marylandicus* GAMBEL, Proc. Ac. Nat. Sci. Phila., iii, 1846, 155, part (California).

*Trichas delafieldii* (not *Sylvia delafieldii* Audubon) HEERMANN, Journ. Ac. Nat. Sci. Phila., ii, 1852, 263, part (California); Rep. Pacific R. R. Surv., x, 1859, 40, part (California).

*Geothlypis trichas occidentalis* (not of Brewster) ANTHONY, Auk, iii, 1886, 171 (Washington Co., Oregon, summer).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 681a, part.—(?) TOWNSEND, Proc. U. S. Nat. Mus., x, 1887, 224 (base of Mount Shasta, n. California).—MERRILL, Auk, v, 1888, 362 (Fort Klamath, Oregon, breeding).—LAWRENCE (R. H.), Auk, ix, 1892, 356 (Grays Harbor, Washington).

<sup>1</sup> Five specimens.

Adult males from different localities average, respectively, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
Four adult males from British Columbia .....	55.1	52.2	10.4	20.2	13.5
Seven adult males from western Washington .....	55.9	53.2	10.4	20.6	13.6
One adult male from western Oregon .....	57	56	11	20	.....
Three adult males from southern California (Santa Clara, Pasadena, etc.) .....	55.5	52.7	10.3	20.5	13
One adult male from Lower California (Seven Wells) .....	57	.....	10	21	14

- G[eothlypis] trichas occidentalis* RIDGWAY, Man. N. Am. Birds, 1887, 523, p.  
*Geothlypis trichas arizela* OBERHOLSER, Auk, xvi, July, 1899, 257 (Fort Steele,  
 Washington, coll. U. S. Nat. Mus.).  
*Geothlypis trichas scarpicola* GRINNELL (J.), Condor, iii, May, 1901, 65 (El M.  
 Los Angeles Co., California; coll. J. Grinnell).

**GEOTHYLPIS TRICHAS MODESTA Nelson.**

**SAN BLAS YELLOW-THROAT.**

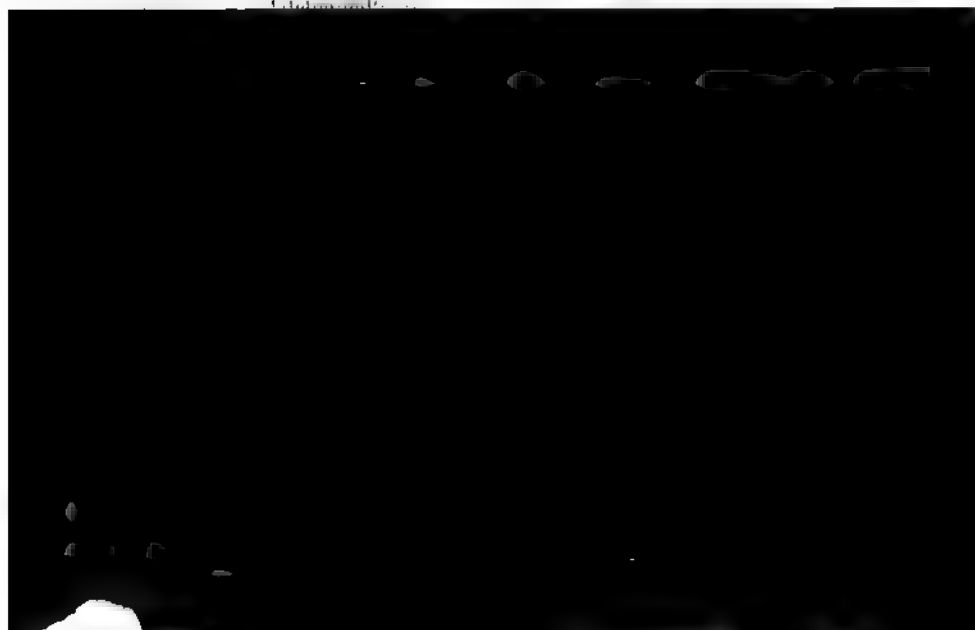
Similar in size and coloration to *G. t. arizela* but with the bill decidedly larger (as large as in *G. t. occidentalis*); much duller in color than *G. t. occidentalis*, with yellow of under parts either paler, orange, or less extended, and with olive-green of upper parts duller and grayer.

*Adult male.* Length (skins), 111-125 (118.2); wing, 52-58.5 (55.5); tail, 47-54 (51.1); exposed culmen, 11-12 (11.4); tarsus, 19-21.5 (20.5); middle toe, 12-14 (13.5).<sup>1</sup>

*Adult female.* — Length (skins), 114-117 (115.3); wing, 52; 45.5-50 (48.2); exposed culmen, 10-11 (10.3); tarsus, 19-20 (19.5); middle toe, 12.5-14 (13.2).<sup>1</sup>

Western and central Mexico, in Territory of Tepic and State of Sonora (Ortiz), Sinaloa, Jalisco, and Colima (also States of Puebla and Tlaxcala?).

- (?) *Geothlypis trichas* (not *Turdus trichas* LINNÆUS) SCLATER, Proc. Zool. Acad., 1856, 292 (Mexico) — DUGES, La Naturelle, i, 1870, 140 (Guanajuato).  
*Geothlypis trichas* LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269, part (Tepic).  
 BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 297, p.  
 SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 150, part ("Catalpa and the ...").





*Adult female*.—Length (skin), 98; wing, 48; tail, 43; exposed culmen, 10; tarsus, 19; middle toe, 12.<sup>1</sup>

Salt marshes about San Francisco Bay, California (Marin, Contra Costa, Alameda, and Santa Clara counties).

*Geothlypis trichas sinuosa* GRINNELL (J.), Condor, iii, May, 1901, 65 (Palo Alto, Santa Clara Co., California; coll. J. Grinnell).

### GEOTHYLPIS TRICHAS MELANOPS (Baird).

#### JALAPA YELLOW-THROAT.

Similar to *G. t. occidentalis*, but wing and tail longer, the adult male with under parts entirely rich yellow, and with feathers of occiput and hindneck yellow beneath the surface.

*Adult male*.—Forehead and loreal, orbital, auricular, and malar regions uniform deep black, forming a conspicuous "mask," this continued posteriorly, in an angular point, along each side of lower throat; crown and supra-auricular region grayish white, the latter changing gradually to yellow on sides of neck; occiput and hindneck olive or olive-brown superficially, the feathers yellow or olive-yellow beneath the surface, grayish dusky at base; rest of upper parts plain yellowish olive-green; under parts rich lemon yellow, the sides and flanks (especially the latter) buffy olive; bill brownish black, or dark brown, with paler tomia; iris brown; legs and feet pale buffy brown (in dried skins); length (skins), 125–127 (126); wing, 61–61.5 (61.2); tail, 59–61.5 (60.2); exposed culmen, 11–11.5 (11.2); tarsus, 21; middle toe, 14.5.<sup>2</sup>

*Adult female*.—"General color above dull olive-brown, slightly more olive-yellow on the rump and upper tail-coverts; wing-coverts like the back, the bastard-wing and primary-coverts dull brown; quills dark brown, externally edged with olive, the first primary whitish along the edge of the outer web; tail-feathers dull yellowish-olive, lighter on the edges; head decidedly browner than the back, and somewhat rufous-brown on the crown; lores ashy white; eyelid clearer whitish; ear-coverts olive-brown, yellowish near the lower edge, and with pale yellowish-brown shaft-lines; cheeks and under surface of body pale yellow, becoming whiter on the abdomen, the sides of the neck and breast washed with pale reddish-brown; flanks and sides of the body and thighs light earthy brown; under tail-coverts bright yellow pale reddish brown near the vent; under wing-coverts and axillaries pale yellow, brighter along the edge of the wing; quills dusky below; ashy along the edge of the inner web. Total length, 132.1, culmen 12.7, wing 57.1, tail 58.4, tarsus 20.3."<sup>3</sup>

<sup>1</sup> One specimen.

<sup>2</sup> Two specimens.

<sup>3</sup> Sharpe, Cat. Birds Brit. Mus., x, 1885, 356. (Measurements changed to millimeters.)

Mexico (Jalapa, Vera Cruz: Putla, Oaxaca: Valley of Mexico).<sup>1</sup>

*Geothlypis melanocephala* BAIRD. Review Am. Birds, Apr., 1865, 222 (Mexico; coll. U. S. Nat. Mus.).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 551 (near Putla, Oaxaca).—SALVIN, Ibis, 1872, 149 (monogr.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves. i, 1881, 151.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 355, pl. 10, fig. 2 (near City of Mexico; Jalapa, Vera Cruz).

[*Geothlypis*] *melanocephala* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 9.

*G[eo]thlypis melanocephala* RIDGWAY, Man. N. Am. Birds, 1887, 524.

[*Geothlypis trichas*] *y. melanocephala* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458.

*Geothlypis trichas* var. *melanocephala* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458.

[*Geothlypis trichas*] var. *melanocephala* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds. i, 1874, 296.—COCHE, Birds N. W., 1874, 74, in text.

*Geothlypis trichas melanocephala* PALMER (W.), Auk, xvii, July, 1900, 222.

## GEOTHLYPIS ROSTRATA Bryant.

## BRYANT'S YELLOW-THROAT.

Similar in coloration to *G. trichas trichas*, but very much larger.

*Adult male in spring and summer.*<sup>2</sup>—Forehead, lores, suborbital, malar, and auricular regions uniform black, this 8–10 wide (measured from frontal antiæ) on forehead, and passing narrowly along posterior upper margin of eye; crown and occiput plain gray (light mouse gray or olive-gray), usually decidedly paler (about gray no. 9 or no. 10) next to black of forehead, the black mask margined posteriorly, from above the posterior portion of the eye to the sides of the neck,<sup>3</sup> by still paler gray (sometimes almost grayish white), very faintly tinged with yellow, especially below; hindneck gray, like occiput, but usually more tinged with olive, and gradually passing into grayish olive-green

<sup>1</sup> Unfortunately the range of this species is very imperfectly known. The type is a

on back, scapulars, rump, and upper tail-coverts; wings and tail more decidedly olive-green; under parts light lemon or canary yellow, becoming decidedly paler (sometimes yellowish white) on lower abdomen and anal region and changing to pale yellowish gray or buffy olive on flanks and posterior portion of sides; longer under tail-coverts, with concealed portion largely pale yellowish olive; maxilla dark brown or brownish black, with paler tomia; mandible pale brownish (in dried skins), darker terminally;<sup>1</sup> iris brown; legs and feet pale brown (in dried skins); length (skins), 125–146 (137.3); wing, 60–65.5 (62.4); tail, 55–61.5 (58.2); exposed culmen, 15–17.3 (15.7); depth of bill at nostrils, 4.6–5.1 (4.8); tarsus, 22–23.6 (22.8); middle toe, 14–15.2 (14.6).<sup>2</sup>

*Adult female in spring.*—Pileum and hindneck plain light grayish brown (hair brown), the forehead more grayish, the anterior portion of crown faintly tinged with warmer pale brown; rest of upper parts plain grayish olive-green, brighter on wings and tail, where sometimes inclining to yellowish olive-green; sides of head and neck similar to pileum and hindneck, but slightly paler, especially on suborbital region and lower portion of auricular region, which are narrowly and indistinctly streaked with paler; malar region pale buffy grayish; chin, throat, and chest pale yellow (nearly straw yellow), the breast also sometimes pale yellow; rest of under parts dull white, becoming pale grayish olive or buffy olive on sides and flanks; under tail-coverts pale yellow; bill, legs, and feet as in adult male, but the first rather paler; length (skins), 130–132 (131.4); wing, 57.5–59 (58.2); tail, 53–55.9 (54.3); exposed culmen, 15–15.5 (15.2); tarsus, 21.8–22.5 (22.3); middle toe, 14–14.5 (14.3).<sup>3</sup>

Island of New Providence, Bahamas.

*Geothlypis rostratus* BRYANT, Proc. Bost. Soc. N. H., xi, Mar., 1867, 67 (Nassau, New Providence Island, Bahamas; type now in coll. U. S. Nat. Mus.).—CORY, Birds Bahama Is., 1880, 73; Cat. W. I. Birds, 1892, 156, part (New Providence).

[*Geothlypis*] *rostratus* CORY, List Birds W. I., 1885, 9.

*Geothlypis rostrata* SHARPE, Cat. Birds Brit. Mus., x, 1885, 355.—CORY, Auk, iii, 1886, 43; Birds, W. I., 1889, 57; Cat. W. I. Birds, 1892 18 119, 127, part (New Providence Island).—RIDGWAY, Auk, viii, 1891, 335 (New Providence).—BANGS, Auk, xvii, 1900, 290 (crit.; descr.).

*G[eo]thlypis rostrata* RIDGWAY, Man. N. Am. Birds, 1887, 524.

[*Trichas*] *rostrata* GRAY, Hand-list, i, 1869, 242, no. 3513.

[*Geothlypis trichas*] *β. rostrata* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 458.

*Geothlypis trichas* var. *rostrata* RIDGWAY, Am. Journ. Sci. iv, Dec. 1872, 458.

[*Geothlypis trichas*] var. *rostrata* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296.

<sup>1</sup> Bill almost wholly blackish in midsummer.

<sup>2</sup> Fifteen specimens.

<sup>3</sup> Three specimens.

## GEOTHYLPIS MAYNARDI Bangs.

## MAYNARD'S YELLOW-THROAT.

Similar to *G. rostrata*, but wing and tail longer, and coloration much brighter. Adult male with back, scapulars, rump, etc., bright yellowish olive-green instead of grayish olive-green, the whitish band behind the black "mask" faintly tinged with yellow, especially on lateral portion; under parts entirely yellow, the yellow brighter than in *G. rostrata*. Adult female with back, etc., yellowish olive-green (the pileum and hindneck being colored as in *G. rostrata*), and with under parts almost wholly bright yellow, only the lower abdomen being whitish.

*Adult male*.—Length (skins), 130–147.3 (138.7); wing, 61.2–66.5 (64.8); tail, 56.5–62.5 (59.7); exposed culmen, 14.5–16 (15.5); depth of bill at base, 4.5–5.5 (4.9); tarsus, 22.5–23.9 (23); middle toe, 14–15.2 (14.8).<sup>1</sup>

*Adult female*.—Length (skins), 130–137 (133.2); wing, 61–62 (61.5); tail, 56–59 (56.9); exposed culmen, 14.5; tarsus, 21.5–23 (22.2); middle toe, 14–15 (14.4).<sup>2</sup>

Island of New Providence, Bahamas.

*Geothlypis maynardi* BANGS, Auk, xvii, July, 1900, 290 (Nassau, New Providence Island, Bahamas; coll. E. A. and O. Bangs).

## GEOTHYLPIS TANNERI Ridgway.

## TANNER'S YELLOW-THROAT.

Similar to *G. maynardi*, but wing and tail longer. Adult male with crown, occiput, and hindneck olive-green, becoming paler and tinged with gray and yellow next to posterior border of black on forehead

## GEOTHYLPIS INCOMPTA Ridgway.

## LESSER ABACO YELLOW-THROAT.

Similar to *G. tanneri*, but wing and tail much shorter; the adult male much duller in color, with hinder crown, occiput, and hindneck dull grayish olive instead of olive-green, with a narrow band of pale yellowish gray or grayish yellow behind posterior border of the black mask; the back, etc., duller olive-green, and under parts paler yellow, becoming whitish on lower abdomen and grayish olive on flanks.

*Adult male*.—Length (skins), 130–131 (130.5); wing, 61–61.5 (61.2); tail, 54.5–57.5 (56); exposed culmen, 15–16.5 (15.7); tarsus, 21.5–22.5 (22); middle toe, 14–15 (14.5).<sup>1</sup>

Island of Abaco, Bahamas.<sup>2</sup>

*Geothlypis tanneri*, part, RIDGWAY, Auk, iii, 1886, 335 (Abaco Island, Bahamas); viii, 1891, 334 (Abaco).

## GEOTHYLPIS EXIGUA Ridgway.

## ANDROS YELLOW-THROAT.

Similar to *G. incompta*, but with shorter wing and smaller bill (the latter decidedly more slender), the adult male with the back slightly brighter olive-green and throat slightly brighter yellow; length (skin), 130; wing, 59; tail, 55.55; exposed culmen, 15; depth of bill at base, 4.5; tarsus, 21.5; middle toe, 13.2.<sup>3</sup>

Andros Island, Bahamas.

*Geothlypis rostrata* (not of Bryant) NORTHROP, Auk, viii, 1891, 68 (Andros I., Bahamas).—ALLEN, Auk, viii, 1891, 69 (Andros I.; crit.).—CORY, Cat. W. I. Birds, 1892, 18, 119, 127, part (Andros I.).

*Geothlypis rostratus* CORY, Cat. W. I. Birds, 1892, 156, part (Andros I.).

## GEOTHYLPIS CORYI Ridgway.

## CORY'S YELLOW-THROAT.

Similar to *G. flavida*, but wing and tail shorter and bill longer; adult male with olive-green of upper parts greener, crown less tinged with gray and becoming decidedly yellowish along posterior margin of the black frontal patch, the latter narrower (extending 8–9 mm. from frontal antiæ).

*Adult male*.—Forehead (back to about 8 to 9 mm. from frontal antiæ) and side of head, including loreal, orbital, auricular, and malar regions, uniform black, this extending as an angular projection along sides of lower throat; this black "mask" margined posteriorly by light

<sup>1</sup> Two specimens. The adult female not seen.

<sup>2</sup> Type in collection of United States National Museum (no. 108495, Abaco Island, Bahamas, April 6, 1886; collected by C. H. Townsend).

<sup>3</sup> One specimen, the type, from Fresh Creek, Andros Island, Bahamas, April 24, 1893 (no. 5808, coll. G. S. Miller, jr.).

gamboge or canary yellow less distinct across the crown, where shading gradually into the grayish olive-green of hinder crown, occiput, and hindneck, this again not conspicuously different from the bright olive-green of remaining upper parts; under parts entirely rich lemon or gamboge yellow, shaded with olive or inclining to yellowish olive-green on sides and flanks; maxilla brownish black, mandible paler, more horn-colored, especially toward base; legs and feet pale brownish (in dried skins); length (skins), 137; wing, 60-65 (62.5); tail, 58.5-59 (58.7); exposed culmen, 16-16.5 (16.2); tarsus, 21.5-22.5 (22); middle toe, 14.5-15 (14.7).<sup>1</sup>

*Adult female*.—Forehead and superciliary region (broadly) olive-yellow; crown, occiput, and hindneck deep olive-gray or grayish olive; terminal half of auricular region gray, slightly tinged with olive; anterior portion of auricular region and suborbital region olive-yellow, the latter mottled with olive-grayish; lores olive-grayish; rest of plumage as in adult male; length (skin), 144.8; wing, 61; tail, 57.1; exposed culmen, 15.5; tarsus, 22.9; middle toe, 13.2.<sup>2</sup>

Eleuthera Island, Bahamas.

*Geothlypis coryi* RIDGWAY, Auk, iii, July, 1886, 334 (Eleuthera Island, Bahamas; coll. U. S. Nat. Mus.); viii, 1891, 336 (do.).—COY, Auk, v, 1888, 157 (Eleuthera); viii, 1891, 351 (do.); Birds W. I., 1889, 287; Cat. W. I. Birds, 1892, 18, 119, 126, 127, 156.

*G[*geothlypis*] coryi* RIDGWAY, Man. N. Am. Birds, 1887, 525.

#### GEOTHLYPIS FLAVIDA Ridgway.

LUTEOUS YELLOW-THROAT.



## GEOTHYLPIS BELDINGI Ridgway.

## BELDING'S YELLOW-THROAT.

Much larger than any of the forms of *G. trichas* (tarsus 22.9–24.6, exposed culmen 12.9–14), the adult male with the black mask bordered continuously behind by bright yellow.

*Adult male*.—Forehead, with loreal, orbital, auricular, and malar regions uniform black, forming a conspicuous black “mask;” space immediately behind this black area clear yellow (intermediate between canary and naples yellow, brightening into lemon yellow on sides of neck); occiput and hindneck olive or olive-brown superficially, the feathers olive-yellow or yellowish olive-green beneath the surface, grayish dusky at base; rest of upper parts plain olive-green; under parts rich lemon or gamboge yellow, passing into paler yellow on lower abdomen and anal region and into light brownish or buffy olive-green on sides and flanks; bill black, with paler tomia, in summer, browner, with mandible paler basally, in winter; iris brown; legs and feet light brownish (in dried skins); length (skins), 135.1–140.5 (138.3); wing, 61.2–64.3 (62.8); tail, 61.5–65.8 (63); exposed culmen, 13.2–14 (13.6); tarsus, 22.9–24.6 (23.5); middle toe, 15–16.8 (15.6).<sup>1</sup>

*Adult female*.—Above dull yellowish olive-green, brighter on wings and tail, paler on forehead, the anterior portion of crown tinged with or inclining to russet-brown; an indistinct narrow superciliary stripe of olive-yellowish; lores and suborbital and auricular regions olive-dusky; malar region, chin, throat, chest, breast, and upper abdomen lemon or gamboge yellow, deeper on chest; lower abdomen dull buffy whitish; under tail-coverts yellow, paler than that on throat, etc.; sides and flanks light buffy olive; maxilla dark brown with paler tomia; mandible horn brownish, darker terminally, paler basally; iris and feet as in adult male; length (skins), 131.6–135.9 (133.4); wing, 58.7–59.9 (59.2); tail, 57.9–61 (59.8); exposed culmen, 12.9–13.7 (13.4); tarsus, 22.9–23.1 (23); middle toe, 15.2–15.5 (15.3).<sup>2</sup>

[In winter both sexes have the feathers of back, etc., indistinctly tipped with grayish, and color of sides and flanks rather paler and more buffy, but otherwise similar to the spring plumage.]

*Young, first plumage*.—“Above uniform dark olive-brown; below, sides, and under wing-coverts light yellowish buff. Faint indications of light superciliary stripe. Wings above dark olive-green, with distinct greenish edging to outer web of each feather except the first, which has a whitish edging the same as adults. Greater wing-coverts rusty on edges. Tail olive-green above, lighter below.”<sup>3</sup>

<sup>1</sup> Eight specimens.

<sup>2</sup> Three specimens.

<sup>3</sup> Bryant (W. E.), Bull. Calif. Ac. Sci., 2d ser., ii, 1889, 20.

Cape St. Lucas district of Lower California (San José del Cabo; La Paz; Comandu).

*Geothlypis beldingi* RIDGWAY, Proc. U. S. Nat. Mus., v, Sept. 5, 1882, 344 (San José del Cabo, Lower California; coll. U. S. Nat. Mus.); Bull. Nutt. Orn. Club, vii, 1882, 257; 1887, 524.—BELDING, Proc. U. S. Nat. Mus., v, 1883, 546 (La Paz, Lower California).—BRYANT, Proc. Calif. Ac. Sci., 2d ser., ii, 1889, 20 (Comandu, Lower California; descr. young, nest and eggs, etc.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 356 (San José del Cabo).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 682.

*G[*eo*thlypis] beldingi* RIDGWAY, Man. N. Am. Birds, 1887, 524.

**GEOTHTYPIS FLAVOVELATA** Ridgway.

**ALTA MIRA YELLOW-THROAT.**

Adult male similar in coloration to *G. beldingi* but very much smaller (rather smaller than *G. trichas melanops*).

*Adult male in winter*.—Forehead, together with loreal, suborbital, malar, and auricular regions uniform black, forming a conspicuous "mask;" behind this black mask a broad band of canary yellow, about 5 mm. in width; occiput and hindneck brownish olive superficially, the feathers yellowish olive-green beneath the surface, this more yellowish toward the yellow crown-band; rest of upper parts uniform bright yellowish olive-green, the remiges decidedly duller, more grayish olive-green; under parts bright lemon yellow (slightly paler on abdomen and under tail-coverts), the sides and flanks light brownish or buffy olive-green; maxilla dark brown (nearly black on culmen), much paler on tomia; mandible pale brownish basally, darker terminally; legs and feet light horn brownish (in dried skins); length (skin),





bright yellowish olive-green, abruptly defined anteriorly against yellow of hindneck; under parts rich lemon yellow, the sides and flanks strongly tinged with light brownish olive-green; bill entirely deep black; legs and feet pale brown (in dried skin); length (skin), 121; wing, 55.5; tail, 54; exposed culmen, 14; tarsus, 21.5; middle toe, 14.5.<sup>1</sup>

*Adult female in spring.*—Forehead and supra-auricular region wax yellow;<sup>2</sup> crown, occiput, and hindneck brownish olive-green; rest of upper parts plain yellowish olive-green, becoming dull grayish on terminal portion of remiges; upper portion of lores yellowish, like superciliary and supra-auricular regions; lower portion of lores pale grayish; suborbital and auricular regions light olive-grayish, more or less tinged with yellow, and finely streaked with paler; lower parts (including malar region) bright lemon yellow, more or less tinged with indian yellow or saffron yellow on chest (sometimes on throat and chin also), the sides and flanks shaded with brownish olive-green; maxilla brownish black with paler tomia; mandible similar but more or less brownish basally; feet as in adult male; length (skins), 118–123 (121); wing, 51–54.5 (52.3); tail, 49–50 (49.7); exposed culmen, 11.5–12 (11.7); tarsus, 20–21 (20.3); middle toe, 13.5–14.5 (14).<sup>3</sup>

*Young male, first plumage.*—Above plain olive, the remiges and rectrices olive-green; sides of head and neck similar in color to upper parts, but loreal, suborbital, and auricular regions duller, more grayish olive; a small dull whitish spot on lower eyelid; under parts plain pale olive, the abdomen, anal region, and under tail-coverts pale buffy yellow or straw yellow; bill as in adult female.

Eastern Mexico (Alta Mira, near Tampico, southern Tamaulipas).

*Geothlypis flaviceps* NELSON, Auk, xvi, Jan., 1899, 31 (Alta Mira, near Tampico, s. Tamaulipas, e. Mexico; coll. U. S. Nat. Mus.).

### GEOTHTYPIS CHIRIQUENSIS Salvin.

#### CHIRIQUI YELLOW-THROAT.

Similar to *G. velata*,<sup>4</sup> but with the forehead much more extensively black.

*Adult male.*—"General color above olive-yellow [i. e., olive-green], a shade lighter on the rump and upper tail-coverts; lesser and median wing-coverts like the back; greater coverts, primary coverts, and quills dusky brown, externally like the back, the primaries decidedly

<sup>1</sup> One specimen (the type).

<sup>2</sup> This sometimes involving anterior portion of crown.

<sup>3</sup> Three specimens.

<sup>4</sup> *Sylvia velata* Vieillot, Ois. Am. Sept., ii, 1807, 22, pl. 74.—*G[eohtlypis] velata* Cabanis, Mus. Hein., i, 1850, 16.—*Geothlypis velata* Sclater, Cat. Am. Birds, 1862, 27.—[*Sylvia*] *cucullata* Latham, Index Orn., ii, 1790, 528.—*Tanagra canicapilla* Swainson, Zool. Illustr., 1st ser., iii, 1822–23, pl. 174. (Brazil, Argentina, Paraguay, and eastern Peru.)

brighter yellow along the outer web, grayish toward their ends, the first primary margined with pale olive-yellow; bastard-wing feathers dusky brown, narrowly edged with olive-yellow, bright yellow along the edge of the outer one, like the edge of the wing; tail-feathers olive-yellowish [i. e., olive-greenish]; crown of head bluish gray, the occiput and nape like back; a broad band of black across the forehead; feathers above and around the eye, cheeks, and ear-coverts black; the gray of the head skirting the ear-coverts at the sides of the neck; entire under surface of body brilliant yellow, a little paler on the under tail-coverts; sides of body and flanks, as well as the thighs, olive-green; under wing-coverts brilliant yellow, the axillaries more olive-yellow; edge of wing bright yellow; quills dusky below, ashy along the edge of the inner web. Total length, 127; culmen, 15.2; wing, 61; tail, 50.8; tarsus, 22.9." 2

Province of Chiriqui, Colombia (Volcan de Chiriqui).

*Geothlypis chiriquensis* SALVIN, Ibis, 3d ser., ii, Apr., 1872, 148, in text (Volcan de Chiriqui, Veragua; coll. Salvin and Godman).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 152, pl. 9, fig. 1.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 382, pl. 9, fig. 6.

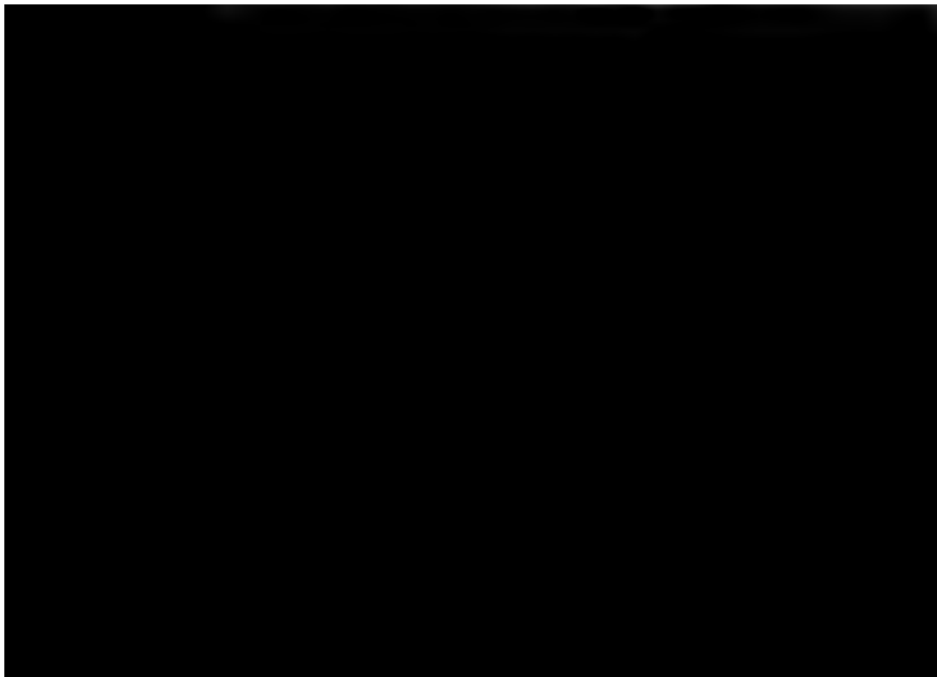
[*Geothlypis*] *chiriquensis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10.

[*Geothlypis xquinoctialis*]  $\beta$ . *chiriquensis* SALVIN, Ibis, April, 1872, 149.

[*Geothlypis xquinoctialis*]  $\gamma$ . *chiriquensis* RIDGWAY, Am. Jour. Sci., iv, Dec., 1872, 458.

*Geothlypis xquinoctialis* var. *chiriquensis* RIDGWAY, Am. Jour. Sci., iv, Dec., 1872, 458.

#### GEOETHLYPIS SEMIFLAVA BAIRDI (Nutting).



malar regions uniform black, forming a conspicuous "mask," this everywhere sharply defined except on crown, where the posterior margin is more or less broken; rest of upper parts uniform deep olive-green, changing to dark grayish brown on terminal portion of remiges; under parts bright lemon yellow, changing to olive-green on sides, flanks, and thighs; bill black, or nearly so; iris brown; legs and feet light horn brown (in dried skins). [In winter the plumage similar, but mandible and maxillary tomia light horn brownish.] Length (skins), 110–130 (119.4); wing, 58–60.5 (58.9); tail, 45–49 (47); exposed culmen, 13–14 (13.8); tarsus, 21–23 (21.5); middle toe, 14–16 (15.4).<sup>1</sup>

*Adult female*.—Above, including sides of neck, plain deep yellowish olive-green, becoming more yellowish on forehead and superciliary region; lores dull grayish; suborbital and auricular regions olive-green, narrowly and indistinctly streaked with yellow; under parts bright lemon yellow, the sides and flanks olive-green; bill, etc., as in adult male; length (skin), 117; wing, 55; tail, 43; exposed culmen, 14; tarsus, 22; middle toe, 15.<sup>2</sup>

*Young female, first plumage*.—Above plain greenish olive, becoming olive-green on upper tail-coverts and edges of rectrices; sides of head paler olive; chin and upper throat pale buffy olive, deepening on lower throat and chest into deeper buffy olive, the sides and flanks more decidedly olive; breast and abdomen pale buffy yellow.

*Young male (?)*, *first plumage*.<sup>3</sup>—Similar to the young female, as described above, but slightly more greenish olive above, and chin, throat, breast, and abdomen bright olive-yellow.

Southern Honduras (Segovia River) and eastern Nicaragua (Los Sábalos, Greytown, Rio San Juan, Rio Escondido, etc.), to Costa Rica (Jiménez, Talamanca, San José, etc.).

*Geothlypis bairdi* NUTTING, Proc. U. S. Nat. Mus., vi, Apr. 9, 1884, 398 (Los Sábalos, e. Nicaragua; coll. U. S. Nat. Mus.).—RIDGWAY, Proc. U. S. Nat. Mus., x, 1885, 585 (Segovia R., Honduras).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 527 (San José, Costa Rica; crit.).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 485 (Rio Frio, Costa Rica; Greytown, Rio San Juan and Rio Escondido, Nicaragua).

*Geothlypis semiflava* (not of Sclater) SHARPE, Cat. Birds Brit. Mus., x, 1885, 357 part (in synonymy).

### GEOTHYLPIS SPECIOSA Sclater.

#### ORIZABA YELLOW-THROAT.

*Adult male*.—Head, except chin and throat, dull black, deepest on loreal and suborbital regions, duller on pileum, where passing gradually

<sup>1</sup> Six specimens. The single adult male of *G. s. semiflava* examined measures as follows: Wing, 60; tail, 53; exposed culmen, 13; tarsus, 23; middle toe, 15.

<sup>2</sup> One specimen.

<sup>3</sup> Described from a specimen (sex not determined) collected by Mr. C. H. Townsend on the Segovia River, southern Honduras, July 3, 1887 (no. 112066, coll. U. S. Nat. Mus.).

into dull grayish brown on occiput, this in turn changing gradually to golden olive-green on hindneck, back, and other upper parts, the olive-green brightest on upper tail-coverts; remiges sooty brown, the tertials dull olive-green; chin and throat bright, but not pure, yellow, the remaining under parts rather duller yellow (dull saffron or wax yellow). the sides and flanks dull brownish; bill very slender, dusky; feet dark brown; outermost primary much shorter than innermost, the fifth longest; tail graduated for about 12 mm.; wing, 61; tail, 58; exposed culmen, 12.7; depth of bill at base, 3.8; tarsus, 21.6; middle toe, 14.<sup>1</sup>

*Immature male*.—Similar to the adult male as described above, but pileum dull olive-brown, darker, more dusky grayish, on forehead, the black being restricted to the loreal, suborbital, auricular, and malar regions, the upper portion of the auricular region being dusky grayish; length (skin), 123; wing, 55.5; tail, 52.5; exposed culmen, 12; tarsus, 22; middle toe, 14.<sup>2</sup>

*Adult female*.—"Greener than the male above, and without any black on the head and face; the head a little more ashy olive than the back; wings and tail as in the male; sides of face and ear-coverts olive-brown, mottled with pale yellow spots on the lores and below the eye; upper and lower edge of eyelid pale yellow; under surface of body light fulvous yellow, tinged with saffron on the breast; the sides of the body light reddish brown, shaded with ashy; under tail-coverts brighter yellow."<sup>3</sup> Total length 191.9, culmen 14, wing 52.1, tail, 48.3, tarsus 20.3.

Eastern Mexico (alpine region of Vera Cruz).

*Geothlypis speciosa* SCLATER, Proc. Zool. Soc. Lond., 1853, 447 (Mexico; coll. P. L. Sclater). Cat. A. Birds, 1862, 27. Baird, Rev. Can. An. Birds, 1865, 72.

## GEOTHYLPIS NELSONI NELSONI Richmond.

## HOODED YELLOW-THROAT.

Similar in coloration to *G. semiflava bairdi*, but much smaller and more slender, with much longer tail and smaller bill and feet.

*Adult male in spring and summer*.—Forehead (very broadly<sup>1</sup>), together with loreal, orbital, auricular, and malar regions, uniform deep black, forming a conspicuous “mask;” crown dull gray or olive-gray, at least next to posterior margin of the black frontal area, this gray continued laterally and posteriorly along the upper posterior border of the black mask, where lighter in color than on crown, and sometimes tinged, more or less, with yellow; rest of upper parts, including occiput and hindneck, uniform deep olive-green, this sometimes covering crown also, to the exclusion of the usual gray color of that portion, though the olive-green there is paler and more grayish than on other portions; under parts bright lemon yellow, becoming paler (sometimes almost yellowish white) on lower abdomen and anal region, the sides and flanks olive-green or grayish olive-green; under tail-coverts tinged with olive-green; bill black; legs and feet deep horn color (in dried skins); length (skins), 122–130 (125.7); wing, 56–57 (56.5); tail, 59–64 (61.5); exposed culmen, 11–11.5 (11.2); tarsus, 20–20.5 (20.2); middle toe, 12–13 (12.7).<sup>2</sup>

*Adult female*.—Above plain [yellowish olive], the lores and superciliary region paler; beneath yellow, the breast tinged with ochraceous.<sup>3</sup>

Southeastern Mexico, in States of Vera Cruz (Jalapa; Cofre de Perote; Jico) and Puebla (Chalchicomula).

*Geothlypis cucullata* (not *Sylvia cucullata* Latham<sup>4</sup>) SALVIN and GODMAN, Ibis, 6th ser., i, Apr., 1889, 237 (Cofre de Perote, near Jalapa, Vera Cruz, Mexico; coll. Salvin and Godman).

*Geothlypis nelsoni* RICHMOND, Auk, xvii, Apr., 1900, 197, text (to replace *G. cucullata*, preoccupied).

GEOTHYLPIS NELSONI MICRORHYNCHA Ridgway.<sup>5</sup>

## HIDALGO YELLOW-THROAT.

Similar to *G. n. nelsoni*, but with decidedly smaller bill, the adult male without any gray behind the black mask or with a mere trace of that color.

<sup>1</sup> The black extending 40–50 mm. from the frontal antæ, thus sometimes involving the anterior portion of the crown.

<sup>2</sup> Three specimens.

<sup>3</sup> Translation of Salvin and Godman's description, in Ibis, 1889, 237.

<sup>4</sup> = *Geothlypis velata* (Vieillot).

<sup>5</sup> Type, no. 143333, coll. U. S. Nat. Mus. (Biological Survey collection); Real del Monte, Hidalgo, Mar. 13, 1891; C. P. Streater.

*Adult male*.—Length (skins), 128–129 (128.5); wing, 56–57 (56.5); tail, 59–61 (60); exposed culmen, 10; tarsus, 20.5; middle toe, 13.5.<sup>1</sup>

State of Hidalgo (Real del Monte; Tulancingo), southeastern Mexico.

Genus CHAMÆTHLYPIS Ridgway.

*Chamæthlypis* RIDGWAY, Man. N. Am. Birds, Sept., 1887, 525. (Type, *Geothlypis poliocephala* Baird.)

Similar in general appearance to *Geothlypis*, but tail longer than wing, graduated;<sup>2</sup> bill very stout, with culmen strongly curved (much as in *Icteria*); tarsus nearly half as long as wing, or at least much nearer one-half than one-third as long; no black on forehead nor auriculars in adult males; sexes alike, or at least not very different, in color.

Bill much shorter than head, stout (depth at base equal to nearly half the length of exposed culmen); culmen strongly curved; maxillary tomium distinctly concave or arched, with distinct subterminal notch; mandibular tomium slightly but distinctly convex; gonys nearly straight. Nostril longitudinally oval, in lower anterior portion of nasal fossæ, overhung by a broad membraneous operculum. Rictal bristles obsolete. Wing short, much rounded (seventh, sixth, and fifth primaries longest, ninth shorter than fourth or about equal to third); wing-tip shorter than exposed culmen. Tail decidedly longer than wing, graduated, the rectrices acuminate or subacuminate at tip. Tarsus nearly half as long as wing, or at least very much more than one-third as long, its scutella indistinct or obsolete on outer side; middle toe, with claw, much shorter than tarsus; basal phalanx of middle toe united for basal half (or slightly more) to outer toe, separated for

- c. Duller olive-green above, paler yellow below, the abdomen and anal region distinctly paler (often buffy whitish); wing and tail longer, bill and feet smaller (wing averaging 58.2, tail 62.2, exposed culmen 11.5, tarsus 21.6 in male; 54.5, 59.5, 11.5, and 20.8 in female). (Mexico in general, from States of Morelos and Michoacan north to Sinaloa and to lower Rio Grande Valley of Texas.)

**Chamæthlypis poliocephala poliocephala**, adult male and female (p. 687)

- cc. Brighter olive-green above, brighter and wholly yellow<sup>1</sup> below; wing and tail shorter, bill and feet larger (wing averaging 55.6, tail 59.9, exposed culmen 12.3, tarsus 22.2 in male).<sup>2</sup> (Southeastern Mexico, from State of Vera Cruz to Chiapas, Tabasco, Campêche, and Yucatan.)

**Chamæthlypis poliocephala palpebralis**, adult male and female (p. 689)

- bb. Crown grayish brown, but slightly different from color of back; lores not black. (Immature male and female.<sup>3</sup>)

aa. No white or yellow marks on eyelids. (*Chamæthlypis caninucha*.)

- b. Crown gray; lores black. (Guatemala to Chiriqui.)

**Chamæthlypis caninucha**, adult male and female (p. 689)

- bb. Crown olive or olive-brown, like back; lores not black.

**Chamæthlypis caninucha**, immature male and female (p. 689)

### CHAMÆTHLYPIS POLIOCEPHALA POLIOCEPHALA (Baird).

#### RALPH'S GROUND-CHAT.

*Adults in spring and summer (sexes alike).*—Lores black, this extending beneath the lower eyelid and sometimes narrowly crossing the anterior portion of forehead; pileum gray (no. 6), narrowly and indistinctly streaked with olive, passing gradually into dull grayish olive-green on back, scapulars, wing-coverts, and tertials; primaries, upper tail-coverts, and tail brighter, more yellowish, olive-green; upper eyelid white for posterior half or more, lower eyelid white for its entire length; auricular region grayish, tinged with olive, the lower portion more yellowish; malar region, chin, throat, chest, and breast canary yellow (much paler in worn plumage), fading into buffy whitish on abdomen; sides and flanks light buffy olive; under tail-coverts pale yellow; thighs similar in color to flanks, but paler; maxilla dusky brown with paler tomia; mandible pale brownish (pale flesh color or lilaceous in life?); legs and feet pale buffy brown (in dried skins).

*Adults in autumn and winter.*—Similar to the spring and summer plumage, but plumage softer, more blended; back, etc., more buffy olive or light olive-brown; feathers of pileum (at least the occiput) tipped with brown, and flanks more decidedly buffy.

*Immature male and female.*—Similar in general to the adult plumage, but duller, the pileum concolor with back, or nearly so, and lores dull brownish gray or dusky, not distinctly different from color of pileum.

<sup>1</sup> Except on sides, flanks, and thighs, which are brownish buffy or buffy olive.

<sup>2</sup> No females of this form seen by me.

<sup>3</sup> Only immature specimens of *C. p. poliocephala* examined.

*Adult male*.—Length (skins), 131–143 (135.8); wing, 55–62 (58.2); tail, 56–67 (62.2); exposed culmen, 10–12 (11.5); tarsus, 20–23 (21.6); middle toe, 13–16 (14.6).<sup>1</sup>

*Adult female*.—Length (skins), 127–135 (132.7); wing, 51–55 (54.5); tail, 55–60 (58.2); exposed culmen, 11–12 (11.5); tarsus, 19–21 (20.8); middle toe, 13–15 (14.2).<sup>2</sup>

Northern, western, and central Mexico; south to States of Morelos (Yautepec, January) and Michoacan (Querendaro, August), north to State of Sinaloa (vicinity of Mazatlan) and to the lower Rio Grande Valley in Texas (Brownsville).

*Geothlypis poliocephala* BAIRD, Review Am. Birds, April, 1865, 225 (Mazatlan, Sinaloa, w. Mexico; coll. U. S. Nat. Mus.).—SALVIN, Ibis, 1872, 149, part (monogr.).—RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296 (Mazatlan).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 269 (Mazatlan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 164, pl. 9, fig. 3 (Mazatlan).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 359, part (Presidio, near Mazatlan).

[*Geothlypis*] *poliocephala* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

*G[eo]thlypis poliocephala* RIDGWAY, Man. N. Am. Birds, 1887, 526.

[*Trichas*] *poliocephala* GRAY, Hand-list, i, 1869, 242, no. 3507.

[*Geothlypis poliocephala*] *α. poliocephala* RIDGWAY, Am. Jour. Sci., iv, Dec., 1872, 459.

*Geothlypis poliocephala* var. *poliocephala* RIDGWAY, Am. Jour. Sci., iv, Dec., 1872, 459.

[*Geothlypis poliocephala*] var. *poliocephala* RIDGWAY, in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296.

[*Geothlypis poliocephala*] *α. G. poliocephala* SHARPE, Cat. Birds Brit. Mus., x, 1885, 360, over list of specimens.

*Geothlypis poliocephala palpebralis* (not *G. palpebralis* Ridgway) ALLEN, Auk, viii,



*Geothlypis poliocephala ralphi* RIDGWAY, Proc. U. S. Nat. Mus., xvi, no. 964, Feb. 5, 1894, 692 (Brownsville, Texas; coll. U. S. Nat. Mus.); Man. N. Am. Birds, 2d ed., 1896, 608.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xii, 1895, 165; Check List, 2d ed., 1895, no. 682. 1.

**CHAMÆTHLYPIS POLIOCEPHALA PALPEBRALIS** Ridgway.

**MIRADOR GROUND-CHAT.**

Similar to *C. p. poliocephala*, but much more brightly colored, the under parts entirely yellow (lemon or gamboge), except sides and flanks, which are browner or more deeply buffy olive than in *C. p. poliocephala*; upper parts deeper olive; wing and tail shorter, bill and feet larger.

*Adult male*.—Length (skins), 126–142 (133.8); wing, 54–61 (55.6); tail, 54–65 (59.9); exposed culmen, 11–14 (12.3); tarsus, 20–25 (22.2); middle toe, 14–16 (14.8).<sup>1</sup>

Southeastern Mexico, in States of Vera Cruz (Mirador; San Andreas Tuxtla), Oaxaca?, Chiapas (Palenque; Ocozucuantla), Tabasco (Montecristo), Campêche (Campêche), and Yucatan (Merida; Progreso; La Vega; Chichen Itza).

*Trichas delafieldi* (not *Sylvia delafieldii* Audubon) SCLATER, Proc. Zool. Soc. Lond., 1856, 293 (Cordova, Vera Cruz).

*Geothlypis poliocephala* (not of Baird) LAWRENCE, Ann. Lyc. N. Y., ix, 1869, 200 (Merida, Yucatan).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 546 (Vera Cruz, hot region?).—SALVIN, Ibis, 1872, 149, part (monogr.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 359, part, pl. 9, fig. 3.

[*Geothlypis*] *poliocephala* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

*G[eo]thlypis palpebralis* RIDGWAY, Man. N. Am. Birds, 1887, 526 (Mirador, Vera Cruz, Mexico; coll. U. S. Nat. Mus.).

*Geothlypis* (*Chamæthlypis*) *palpebralis* RIDGWAY, Man. N. Am. Birds, 1887, 592; 2d ed., 1896, 614.

**CHAMÆTHLYPIS CANINUCHA** Ridgway.

**CENTRAL AMERICAN GROUND-CHAT.**

Similar to *C. poliocephala palpebralis*, but without any white or yellowish on eyelids.

*Adult male*.—Length (skins), 116–136 (126.7); wing, 52–57 (55.5);

<sup>1</sup>Seventeen specimens, those from different localities averaging, respectively, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
Three adult males from Vera Cruz.....	56.6	60	12	21.3	14.6
Six adult males from Chiapas.....	55.8	58.8	11.8	22	14.8
Two adult males from Tabasco.....	52	60.5	12.5	23	15.5
Two adult males from Campêche.....	56	60	12	22	14
Four adult males from Yucatan.....	56	61	13.2	23	15

No females of this form have been seen by me.

tail, 55.5-61 (57.9); exposed culmen, 11-13 (11.8); tarsus, 20-23 (22.3); middle toe, 13-16 (14.4).<sup>1</sup>

*Adult female*.—Length (skins), 122-130 (125.4); wing, 51.5-55 (53.6); tail, 54-61 (55.8); exposed culmen, 11-12 (11.3); tarsus, 21-23 (22); middle toe, 13-16 (14.3).<sup>2</sup>

Having but a single Guatemalan specimen (the type of *Geothlypis poliocephala*, var. *caninucha*) for comparison with the Central American series. I for the present unite all under one name. The single Guatemalan specimen has the gray of the pileum extended over the hindneck, which apparently is not the case with any of the specimens from farther southward, and it has the wing and tail longer; but a series from Guatemala might show that these differences are not constant.

Central America, from Guatemala (Retalhuleu) to Chiriqui (Volcan de Chiriqui; Boquete).

*Geothlypis squameopectus* (not *Motacilla squameopectus* Gmelin) SALVIN and SCLATER, Ibis, 1860, 273 (Dueñas, Guatemala).

*Geothlypis poliocephala*, part, BAIRD, Review Am. Birds, 1865, 225 (Retalhuleu, Guatemala).

*Geothlypis poliocephala* (not of Baird) SALVIN, Ibis, 1870, 114 (Costa Rica) — SHARPE, Cat. Birds Brit. Mus., x, 1885, 359, part, pl. 9, fig. 4 (British Honduras; Retalhuleu, San Gerónimo, and Dueñas, Guatemala).

*Geothlypis poliocephala*, var. *caninucha* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 459; in Baird, Brewer, and Ridgway's Hist. N. Am. Birds, i, 1874, 296.

[*Geothlypis poliocephala*] *β. caninucha* RIDGWAY, Am. Journ. Sci., iv., Dec., 1872, 459 (Retalhuleu, Guatemala; coll. U. S. Nat. Mus.).

*Geothlypis poliocephala* . . . var. *caninucha* BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (San José, Costa Rica).

*Geothlypis caninucha* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 153, part, pl. 9, fig. 2 (Patio Bolas, etc., Guatemala; Costa Rica).—ZELENY, Proc. U. S. Nat. Mus., viii, 1885, 105 (Costa Rica); Anal. Mus. Nac. Costa

*Geothlypis cassinucha icterotis* RIDGWAY, Proc. U. S. Nat. Mus., xi, sig. 34, Sept. 20, 1889, 539 (Costa Rica; coll. U. S. Nat. Mus.).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 526 (San José, Costa Rica; crit.); Auk, ix, 1892, 22 (San José).—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 485 (Rio Escondido, Nicaragua).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 61 (Boquete and Volcan de Chiriqui, Chiriqui, 4,000 to 7,500 ft.).

*Geothlypis palpebralis* (not of Ridgway) LANTZ, Trans. Kansas Ac. Sci. for 1896–97 (1900), 223 (San Juan Valley, Costa Rica).

### Genus ICTERIA Vieillot.

*Icteria* VIEILLOT, Ois. Am. Sept., i, 1807, pp. iii, 85. (Type, *Muscicapa viridis* Gmelin, = *Turdus virens* Linnaeus.)

*Icteria* CABANIS, Mus. Hein., i, 1850, 63.

Very large Mniotiltidae with short, stout, arched and unnotched bill, the tarsus less than one-third as long as wing, tail moderately rounded, with rectrices obtuse or rounded at tips; color olive-greenish above, anterior half of under parts yellow; eyelids, malar stripe, and superciliary stripe white, and lores black.

Bill very much shorter than head, deep (basal depth equal to about half the exposed culmen); culmen strongly curved; maxillary tomium without subterminal notch; gonys nearly if not quite straight. Nostril broadly oval, overhung by rather narrow membraneous operculum. Rictal bristles fairly developed. Wing moderate, rounded (seventh to fifth primaries longest, ninth about equal to fourth); wing-tip equal to or shorter than commissure. Tail equal to or longer than wing, rounded, the rectrices rather narrow, with rounded tips. Tarsus about one-third as long as wing or a little less, its scutella indistinct or obsolete on outer side; middle toe, with claw, decidedly shorter than tarsus; basal phalanx of middle toe united for slightly more than half its length to outer toe, for about half its length to inner toe.

*Coloration*.—Above plain olive-green or olive-grayish; beneath with anterior half yellow, posterior half whitish; eyelids, superciliary stripe, and malar stripe white, lores black.

*Nidification*.—Subarboreal (in brambles or thickets).

*Range*.—Temperate North America, including Mexico. (Monotypic.)

#### KEY TO THE SUBSPECIES OF ICTERIA.

- a. Brighter or more decided olive-green above; white of malar region more restricted (occupying less than anterior half); wing, tail, and bill shorter, the tail usually shorter than wing; adult male averaging, wing 76.6, tail 74.5, exposed culmen 14.1; adult female, wing 74.4, tail 71.8, exposed culmen 13.5. (Eastern United States, east of Great Plains, south in winter through eastern Mexico and Central America to Costa Rica.) . . . . . *Icteria virens virens*, adults (p. 692)
- aa. Grayer olive-green, or gray tinged with olive-green, above; white of malar region more extended, occupying more than anterior half (at least in adult males); wing, tail, and bill longer; adult male averaging, wing 79.1, tail 81.4, exposed culmen 14.5; adult female, wing 77.6, tail 78, exposed culmen 14.6. (Western United States and Mexican plateau) . . . *Icteria virens longicauda*, adults (p. 695)

## ICTERIA VIRENS VIRENS (Linnaeus).

## YELLOW-BREASTED GRAY.

*Adult male in spring and summer.*—Above plain grayish olive-green, grayer on upper tail-coverts and (usually) lower rump; a superciliary stripe (extending from nostrils to a short distance behind eye), a crescentic mark on lower eyelid, and anterior portion of malar region white; lores and suborbital region (immediately beneath the white mark on lower eyelid) black or dark slaty; auricular region gray (sometimes tinged with olive-green), with narrow and indistinct paler shaft-streaks; chin, throat, malar region (except anterior portion), chest, breast, upper abdomen, and anterior half or more of sides rich, pure gamboge or lemon yellow, sometimes (in highly plumaged specimens) tinged with orange;<sup>1</sup> flanks pale gray, buffy gray, or grayish buffy; rest of under parts white, the under tail-coverts sometimes tinged with buff; axillars and under wing-coverts yellow; bill and inside of mouth black; iris brown; legs and feet dusky in dried skins, bluish gray in life; length (skins), 154–173 (162.8); wing, 73.5–81 (76.6); tail, 70–83.5 (74.5); exposed culmen, 13–14.5 (14.1); tarsus, 25–27 (26.3); middle toe, 15.5–17 (16.2).<sup>2</sup>

*Adult female in spring and summer.*—Similar to the adult male, but slightly smaller, and more or less duller in coloration,<sup>3</sup> the black or dark slate of lores and suborbital region usually replaced by gray, the yellow of under parts usually less pure or deep (that on sides of breast sometimes tinged with olive), the flanks and under tail-coverts more strongly buffy, and the mandible usually more or less light colored; length (skins), 148–162 (157.4); wing, 72–77 (74.4); tail, 69–75 (71.8); exposed culmen, 13–14 (13.5); tarsus, 25–27 (25.9); middle toe, 15–16.5

[Adults in autumn and winter are like those in spring and summer, but have the olive-green of upper parts more decided, the flanks and under tail-coverts more strongly buffy, and the bill light colored, the maxilla being, in both sexes, horn color; and the mandible pale brownish yellow or buffy, in dried skins.]

*Young, first plumage.*—Above uniform olive or dull olive-green; lores and suborbital region dull gray; white marks on both eyelids, as in adults, but less distinct, but supraloral streak obsolete; malar region, chin, and throat dull white, slightly tinged with yellow; chest, sides, and flanks plain deep olive-gray or smoke gray; rest of under parts white.

Eastern United States; north to Massachusetts (Berkshire County, Malden, etc.), southern New Hampshire (North Conway), New York (Orleans, Yates, Oneida, and Seneca counties), southern Ontario, southern Michigan, southern Wisconsin, and southern Minnesota—casually to southern Maine (Portland); west to edge of the Great Plains (eastern South Dakota to San Antonio, Texas); breeding southward to southern Texas (Brownsville, Hidalgo, Lomita, etc.), and upper portions of Gulf States in general ?. In winter southward through eastern Mexico and Central America to Costa Rica (San José; Lagarto).

[*Turdus*] *virens* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 171 (based on *Yellow-breasted Chat*, *Oenanthe americana, pectore luteo*, Catesby, Nat. Hist. Carolina, i, 50, pl. 50).

*Icteria virens* BAIRD, Review Am. Birds, Apr., 1865, 228.—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 95 (Costa Rica); ix, 1869, 200 (Yucatan); Bull. U. S. Nat. Mus., no. 4, 1876, 17 (Chihuitan and Santa Efigenia, Oaxaca, Nov., Jan.).—FRANTZIUS, Journ. für Orn., 1869, 294 (Costa Rica).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 54 (Vera Cruz, winter).—COUES, Check List, 1873, no. 100; 2d ed., 1882, no. 144.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 307, pl. 15, fig. 12.—BREWSTER, Ann. Lyc. N. Y., xi, 1875, 137 (Ritchie Co., West Virginia; habits; song).—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 440 (Massachusetts and Connecticut, rare summer resid.); xx, 1878, 303 (North Conway, New Hampshire, breeding).—RIDGWAY, Bull. Nutt. Orn. Club, iii, 1878, 60 (descr. young); Nom. N. Am. Birds, 1881, no. 123; Orn. Illinois, i, 1889, 171.—SENNETT, Bull. U. S. Geol. and Geog. Surv. Terr., iv, 1878, 13 (Brownsville and Hidalgo, Texas, breeding); v, 1879, 388 (Lomita, Texas, breeding).—MERRILL, Proc. U. S. Nat. Mus., i, 1878, 124 (Fort Brown, Texas, breeding).—RATHBUN, Rev. List Birds Centr. New York, 1879, 14 (rare summer resid.).—LINTNER, Bull. Nutt. Orn. Club, viii, 1883, 180 (Albany, New York).—BICKNELL, Auk, i, 1884, 216 (song).—McILWRAITH, Auk, i, 1884, 389 (Hamilton, Ontario, 1 spec.); Birds Ontario, 1894, 380 (s. Ontario, breeding).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 138 (Chietla, Puebla, Dec.).—AMERICAN ORITHOLOGISTS' UNION, Check List, 1886, no. 683.—PLATT, Trans. Meriden Sci. Assoc., ii, 1885–86, 50 (Meriden, Connecticut; occasional summer resid.).—BUTLER, Bull. Brookville Soc. N. H., no. 2, 1886, 36 (Franklin Co., Indiana; common summer resid.).—ALLEN, Bull. Am. Mus. N. H., i, 1886, 259 (Essex Co., Massachusetts, breeding).—(?) LLOYD, Auk, iv, 1887, 296 (Tom Green Co., w. Texas, spring migr.).—JOHNSON, Auk, v, 1888, 116 (Malden, Massachusetts, breeding).—COOKE, Bird Migr. Miss. Val., 1888, 260 (s. e. South Dakota; s. w. Minnesota, etc.; dates

of migr.).—EVERMANN, Auk, vi, 1889, 28 (Carroll Co., Indiana, breeding).—FAXON, Auk, vi, 1889, 104 (Berkshire Co., Massachusetts, 1 pair).—SCOTT, Auk, vii, 1890, 22 (apparently not occurring on Gulf coast of Florida!).—CHERRIE, Auk, vii, 1890, 337 (San José, Costa Rica, Oct. 26 to Mar. 1); ix, 1892, 22 (do.); Expl. Zool. Costa Rica, i, Aves, 1893, 14 (Lagarto, s. w. Costa Rica, 1 spec.).—Goss, Hist. Birds Kansas, 1891, 583 (c. Kansas, summer resid.).—MILLER, Auk, viii, 1891, 119 (Highland Light, Massachusetts, 1 spec., Sept. 10).—ATTWATER, Auk, ix, 1892, 342 (San Antonio, Texas, breeding).—TODD, Auk, viii, 1891, 398 (Beaver Co., Pennsylvania, breeding); x, 1893, 41 (Indiana Co., Pennsylvania, breeding).—NEHRLING, Our Native Birds, etc., i, 1893, 258, pl. 15, fig. 3.—RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 485 (Rio Escondido and Greytown, Nicaragua, Oct. 14 and Feb. 4).—BROWN (N. C.), Auk, xi, 1894, 331 (Portland, Maine, accidental).—SAVAGE, Auk, xii, 1895, 393 (West Seneca, w. New York, June 17).—ULREY and WALLACE, Proc. Ind. Ac. Sci., 1895, 158 (Wabash, Indiana, summer resid.).—OBERHOLSER, Bull. Ohio Agric. Sta., tech. ser., i, 1896, 329 (Wayne Co., n. e. Ohio, rare summer resid.).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 277 (Chichen-Itza, Yucatan).—HADLEY, Proc. Ind. Ac. Sci., 1897, 195 (Wayne Co., Indiana, common summer resid.).—WILLIAMS, Auk, xv, 1898, 332 (Oneida Co., New York, breeding).—POSSON, Auk, xvi, 1899, 195 (Orleans Co., New York, May 8 and 31).—DWIGHT, Auk, xvi, 1899, 217, 219, pl. 3, lower fig. (sequence of plumages).—STONE (C. D.), Auk, xvi, 1899, 285 (Yates Co., New York, breeding).—BEYER, Proc. Louis. Soc. Nat. for 1897-99 (1900), 115 (Louisiana, breeding).

[*Icteria virens* GRAY, Hamd-list, i, 1869, 384, no. 5819.—COUES, Key N. Am. Birds, 1872, 106.

[*Icteria virens* . . .] a. *virens* COUES, Birds N. W., 1874, 77.

[*Icteria virens longicauda*] a. *virens* COUES, Birds Col. Val., 1878, 320.

[*Icteria*] *virens* NELSON, Bull. Essex. Inst. viii, 1878, 101 (n. e. Illinois, breeding).—COUES, Key N. Am. Birds, 2d ed., 1884, 312.—RIDGWAY, Man. N. Am. Birds, 1887, 527.

[*Muscicapa*] *viridis* GMELIN, Syst. Nat., i, pt. ii, 1788, 936 (based on *Merle verte de la Caroline*, *Merula viridis carolinensis*, Brisson, Orn., ii, 315; *Yellow-breasted*

*Ampelis luteus* SPARRMAN, Mus. Carls., i, fasc. 3, 1788, pl. 70.

*Icteria dumicola* VIEILLOT, Ois. Am. Sept., i, 1807, 85 (cites *Muscicapa viridis* Linnæus); Enc. Méth., ii, 1823, 702.—VIEILLOT and OUDART, Gal. Ois., i, 1834, 119, pl. 85.

*Icteria dumicola* VIEILLOT, Ois. Am. Sept., i, 1808, pl. 55.

*Pipra polyglotta* WILSON, Am. Orn., i, 1808, 90, pl. 6, fig. 1 (cites *Muscicapa viridis* Gmelin).—BONAPARTE, Journ. Ac. Nat. Sci., Phila., iv, 1825, 251.

(?) *Tanagra auricollis* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 2 (Mexico; see Journ. für Orn., 1863, 57).

[*Icteria*] *auricollis* BONAPARTE, Consp. Av., i, 1850, 331.

*Icteria auricollis* BONAPARTE, Compt. Rend., 1854, 380, 382.

*Icteria velasquezii* BONAPARTE, Proc. Zool. Soc. Lond., 1837, 117 (Guatemala); Consp. Av., i, 1850, 331.—SCLATER, Proc. Zool. Soc. Lond., 1856, 298 (Mexico); 1859, 363 (Jalapa, Vera Cruz), 373 (Playa Vicente, Oaxaca).—SCLATER and SALVIN, Ibis, 1859, 12 (Guatemala).—SALVIN, Ibis, 1866, 202.

## ICTERIA VIRENS LONGICAUDA (Lawrenc

### LONG-TAILED CHAT.

Similar to *I. v. virens*, but wing, tail, and bill longer, the tail always, or nearly always, longer than wing, instead of the reverse; upper parts more grayish olive-green, usually more nearly gray than olive-green; white of malar region much more extended, frequently occupying entire malar area; yellow of under parts averaging deeper.

*Adult male*.—Length (skins), 159–185 (172.8); wing, 75–84 (79.1); tail, 76.5–86 (81.4); exposed culmen, 13.5–15 (14.5); tarsus, 26–28 (26.5); middle toe, 15–17.5 (16.1).<sup>1</sup>

*Adult female*.—Length (skins), 162–177 (167.2); wing, 73–80 (77.6); tail, 72–82 (78); exposed culmen, 13.5–15 (14.6); tarsus, 26–27 (26.4); middle toe, 14.5–16.5 (15.3).<sup>2</sup>

Western United States, from near eastern border of the Great Plains to the Pacific coast; north to North Dakota, Montana, Idaho, and eastern British Columbia (Sumas; Thompson River, below Ashcroft); breeding southward over Mexican plateau to the valley of Mexico; in

<sup>1</sup> Twenty-three specimens.

<sup>2</sup> Six specimens.

Adult males (breeding birds) from different localities average, respectively, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
Three adult males from eastern Colorado and Montana . . . .	79	82.7	14.3	27	16
Five adult males from southern Arizona . . . . .	78	79.6	14.7	26.6	15.7
Five adult males from northern California . . . . .	80.4	83.7	14.4	26.3	15.9
Five adult males from western Texas . . . . .	78.4	81	14.7	26.3	16.4
One adult male from lower Rio Grande Valley (Fort Brown, Texas) . . . . .	78	80	13.5	27	16.5
Two adult males (breeding) from Nuevo Leon . . . . .	79.7	84	14.5	26.7	16.2
Two adult males (summer) from Valley of Mexico . . . . .	80	82.2	14.7	26	17

*Range*.—Mexico (including Yucatan) and Guatemala; Guiana and upper Amazon Valley. (Four species.)

The three Mexican species of this beautiful genus include two types, which differ slightly in structural details and considerably in pattern of coloration; one type (represented by *G. venustus* and *G. francescae*) having the tail longer than the wing, the throat and a considerable part of the lateral rectrices white, and the auricular region black; the other (represented by *G. sallaei*) having the tail shorter than the wing, the throat and auricular region gray, and the lateral rectrices wholly black. The single known South American species (*G. pelzelni*) combines the white throat and black auriculars of the first-mentioned group with the shorter tail and wholly black lateral rectrices of the last mentioned.

KEY TO THE SPECIES AND SUBSPECIES OF GRANATELLUS.

- a. Back, etc., bluish gray or grayish blue; supra-auricular stripe pure white; breast uniform red. (Adult males.)
  - b. Throat white, loreal, suborbital, and auricular regions black.
    - c. Tail with lateral rectrices extensively white; larger (wing 60 or more, tail 67 or more).
      - d. A complete black collar across upper part of chest; smaller (wing averaging 61.3, tail 67.8, tarsus 20). (States of Sinaloa, Colima, Guerrero, and Oaxaca, southwestern Mexico.) . . . *Granatellus venustus*, adult male (p. 699)
      - del. No black collar across upper part of chest; larger (wing averaging 66.4, tail 78.1, tarsus 21). (Tres Marias Islands, western Mexico.)
        - Granatellus francescae*, adult male (p. 700)
    - cc. Tail entirely black; smaller (wing 54, tail 45). (Western Brazil to British Guiana.) . . . . . *Granatellus pelzelni*, adult male (extralimital)<sup>1</sup>
  - ba. Throat, and loreal, suborbital, and auricular regions, gray. (*Granatellus sallaei*)
    - c. Darker, the throat and sides of head slate-gray. (Vera Cruz, Mexico, to Guatemala . . . . . *Granatellus sallaei sallaei*, adult male | 701)



*d.* Breast deeper buff, not touched with red; back, etc., browner gray.

*Granatellus francescæ*, adult female (p. 701)

*dd.* Breast paler buff, or whitish, with touches of red; back, etc., clearer gray.

*Granatellus francescæ*, immature male (p. 701)

*bb.* Lateral rectrices not extensively white, the terminal portion, only, dull white, not sharply defined.

*c.* Darker, with supra-auricular stripe and chest deep buff or ochraceous-buff.

*Granatellus sallæi sallæi*, adult female (p. 702)

*cc.* Paler, with supra-auricular stripe and chest cream buff.

*Granatellus sallæi boucardi*, adult female (p. 703)

## GRANATELLUS VENUSTUS Bonaparte.

### DU BUS' RED-BREASTED CHAT.

*Adult male.*—Pileum, except laterally and anteriorly, hindneck, sides of neck, back, scapulars, wing-coverts, tertials, rump, and upper tail-coverts plain bluish gray or deep plumbeous, slightly more bluish on crown and occiput, the concealed portion of tertials darker; primaries and proximal secondaries dusky, edged with bluish gray; tail black, the outermost rectrix with outer web white, except at base, the inner web with nearly the terminal half white, this extending much farther toward base next to the shaft than on edge of the web; second rectrix with a large wedge-shaped terminal patch of white, the third with a smaller terminal spot, the fourth sometimes with a very small white spot at tip; forehead, sides of crown and occiput, lores, suborbital and auricular regions, and collar extending from the latter across upper chest, black; a broad supra-auricular stripe (or elongated patch), malar region, chin, throat, sides, and flanks white; lower chest, breast, abdomen, and under tail-coverts pure vermilion red; thighs slate color; maxilla dusky horn color with paler tomia; mandible paler (bluish gray in life?); iris white;<sup>1</sup> legs and feet dusky horn color (in dried skins); length (skins), 130–135 (133); wing, 60–63 (61.3); tail, 67–69 (67.8); exposed culmen, 12–12.5 (12.2); tarsus, 19–20 (20); middle toe, 10.5–12 (11.2).<sup>2</sup>

*Adult female.*—Above plain slate-gray, the remiges more brownish gray; tail as in the adult male, but duller black, with the white areas on lateral rectrices somewhat more restricted; forehead and lores wood brown, blending gradually into the gray of the crown; a supra-auricular stripe of light ochraceous-buff; auricular region buffy grayish; malar region, chin, and throat dull white, tinged with buff, especially the first; chest, breast, and abdomen buff, the first slightly tinged with pink along the upper margin; under tail-coverts salmon pink or flesh color; sides and flanks buffy white; bill and feet as in

<sup>1</sup> Xantus, manuscript. (Probably an error.)

<sup>2</sup> Three specimens.

adult male; length (skin), 135; wing, 58; tail, 67; exposed culmen, 12.2; tarsus, 19.5; middle toe, 11.5.<sup>1</sup>

Western Mexico, in States of Oaxaca (Santa Efigenia), Guerrero (Acapulco), Colima (Sierra Madre), and Sinaloa (Rosario; Tatamalis).

*Granatellus venustus* BONAPARTE, *Consp. Av.*, i, 1850, 312 (Mexico; ex Du Bus, manuscript).—SCLATER, *Proc. Zool. Soc. Lond.*, 1864, 607, pl. 37, lower fig.—BAIRD, *Review Am. Birds*, 1865, 231 (Sierra Madre, Colima).—LAWRENCE, *Mem. Bost. Soc. N. H.*, ii, 1874, 270 (Sierra Madre, Colima).—LAWRENCE, *Bull. U. S. Nat. Mus.*, no. 4, 1876, 16 (Santa Efigenia, Oaxaca, Jan.).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1881, 160.—SHARPE, *Cat. Birds Brit. Mus.*, x, 1885, 369.—LOOMIS, *Auk*, xviii, 1901, 110 (Tatamalis and Rosario, Sinaloa; descr. adult female).

[*Granatellus*] *venustus* SCLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 11.

[*Icteria*] *venustus* GRAY, *Hand-list*, i, 1869, 384, no. 5821.

#### GRANATELLUS FRANCESCÆ Baird.

##### TREE NARIAS RED-BREADED GRAY.

Similar to *G. venustus* but larger; adult male without any black collar across upper chest; with an interrupted white collar across hind-neck; red of under parts more restricted; white on lateral rectrices more extended; gray of upper parts lighter and less bluish, and middle and greater wing-coverts margined terminally with white; adult female similar to that of *G. venustus* but larger and paler, with much more white on lateral rectrices.

*Adult male*.—Pileum (except anteriorly and laterally) deep bluish gray or plumbeous; rest of upper parts plain bluish slate-gray, the middle and greater wing-coverts narrowly tipped or terminally margined with white, producing two narrow bands; primaries dusky gray

(66.4); tail, 75–81 (78.1); exposed culmen, 11.2–12.5 (11.8); tarsus, 20–21.5 (21); middle toe, 11.5–13 (12.2).<sup>1</sup>

*Adult female*.—Occiput and hindneck brownish gray, passing gradually into light wood brown or isabella color on forehead; rest of upper parts clearer gray (between slate-gray and smoke gray), the middle and greater wing-coverts tipped with pale buff, forming two rather distinct wing-bands; tail as on the male, but the black portions duller, with outer web slate-gray; a broad supra-auricular stripe of buff or ochraceous-buff, passing gradually over eye into the wood brown or isabella color of forehead; lores dull buffy whitish; auricular region pale buffy grayish or dull buffy; malar region, chin, and throat dull white, buffy white, or pale buff; chest and sides pale buff; rest of under parts white or buffy white, the under tail-coverts sometimes tinged with pink; bill, legs, and feet as in adult male; length (skins), 142–156 (148.7); wing, 62–64 (62.9); tail, 75–77 (75.7); exposed culmen, 11.2–12 (11.7); tarsus, 21–21.5 (21.2); middle toe, 11.2–12 (11.7).<sup>2</sup>

*Immature male*.—Similar to the adult female but back, etc., clearer gray, sides of pileum (sometimes forehead and part of auricular region also) black, chest and median line of breast and abdomen more or less tinged with pink, and under tail-coverts pink.

Tres Marias Islands, western Mexico.

*Granatellus francescæ* BAIRD, Review Am. Birds, April, 1865, 232 (Tres Marias Islands, w. Mexico; coll. U. S. Nat. Mus.).—GRAYSON, Proc. Bost. Soc. N. H., xiv, 1871, 278 (habits).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 270.—SALVIN, Ibis, 1874, 307, pl. 11 (crit.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 160.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 370.—NELSON, N. Am. Fauna, no. 14, 1899, 56 (Maria Madre, Tres Marias; habits; crit.).

[*Icteria*] *francescæ* GRAY, Hand-list, i, 1869, 384, no. 5824.

## GRANATELLUS SALLÆI SALLÆI Bonaparte.

### SALLE'S RED-BREASTED CHAT.

*Adult male*.—Upper parts plain deep bluish slate, the crown margined along each side by a broad but not sharply defined black line; remiges and rectrices black, edged with slate color, the outermost rectrices with an indistinct wedge-shaped terminal spot of dark gray and (except in worn plumage) margined terminally with white; a supra-auricular stripe of white; loreal, orbital, auricular and malar regions, chin, and throat uniform slate-gray; chest, breast, abdomen, anal region, and under tail-coverts pure vermilion red or geranium red; sides of breast, sides, and outer portion of flanks slate-gray; inner por-

<sup>1</sup>Five specimens.

<sup>2</sup>Four specimens.

tion of flanks (next to red of abdomen) white; maxilla dusky horn color or blackish with paler tomia; mandible paler (bluish gray in life?); legs and feet horn color (in dried skins); length (skins), 122.7-128 (125.3); wing, 56.6-61.5 (58.7); tail, 56-57.9 (56.9); exposed culmen, 11-12.2 (11.5); tarsus, 18.3-18.8 (18.5); middle toe, 10.7-12.2 (11.6).<sup>1</sup>

*Adult female.* Above varying from mouse gray to bluish slate-gray, the remiges and rectrices as in the adult male, but tertials and edgings of other remiges grayish brown; no black on sides of crown; supra-auricular stripe buff or ochraceous-buff; auricular region grayish or dull buffy grayish; malar region, chin, and throat dull pale buffy; chest, sides, and flanks deep buff; abdomen buffy white; under tail-coverts pale buff; bill, legs, and feet as in the adult male; length (skins), 117-144.8 (125); wing, 55.6-57.7 (56.6); tail, 53.8-56 (55); exposed culmen, 11-11.4 (11.1); tarsus, 18.3-19 (18.5); middle toe, 10.7-12 (11.1).<sup>2</sup>

Southeastern Mexico, in States Vera Cruz (Cordova; Potrero; Buena Vista) and Oaxaca (Playa Vicente; Tuxtepec), and Guatemala (Cahabon; near Tactic).

*Setophaga sulli* "Bonap. and Schleg" BONAPARTE, Compt. Rend., xlii, May, 1856, 957 (Cordova, Vera Cruz).

*Granatellus sulli* SCLATER, Proc. Zool. Soc. Lond., July 8, 1856, 292, pl. 120 (Cordova); 1858, 97 (n. Mexico); 1859, 374 (Playa Vicente, Oaxaca; descr. female); 1864, 607. —SALVIN and SCLATER, Ibis, 1860, 397 (Cahabon, Guatemala). —SENNICHART, Mem. Bost. Soc. N. H., i, 1869, 546 (Potrero, near Cordova, Vera Cruz). —SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 161, part (Cordova and Potrero, Vera Cruz; Playa Vicente, Oaxaca; Cahabon and near Tactic, Guatemala). —SHARPE, Cat. Birds Brit. Mus., x, 1885, 371, part (Cordova; Guatemalan localities).

*Granatellus sulli* BIRD, Review Am. Birds, 1865, 232, footnote.

*Granatellus sulli* SCLATER and SALVIN, Num. Av. Nupt., 1873, 11.

## GRANATELLUS SALLÆI BOUCARDI Ridgway.

## BOUCARD'S RED-BREASTED CHAT.

Similar to *G. s. sallæi*, but paler; adult male with sides of head, chin, and throat pale gray (gray no. 7 or no. 8<sup>1</sup>) instead of slate-gray; adult female with upper parts smoke gray instead of deep mouse gray, the supra-auricular stripe, chest, etc., cream buff instead of deep buff or ochraceous-buff.

*Adult male*.—Length (skins), 122–125 (123.5); wing, 58–58.4 (58.2); tail, 54–57.4 (55.7); exposed culmen, 11.4–12 (11.7); tarsus, 18.8–20 (19.4); middle toe, 11.4–12 (11.7).<sup>2</sup>

*Adult female*.—Length (skin), 119; wing, 57; tail, 56; exposed culmen, 11; tarsus, 19; middle toe, 11.<sup>3</sup>

Yucatan.

*Granatellus sallæi* (not *Setophaga sallæi* Bonaparte) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 161, part (Yucatan).—BOUCARD, Proc. Zool. Soc. Lond., 1883, 441 (Yucatan).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 371, part (n. Yucatan).

*Granatellus sallæi boucardi* RIDGWAY, Proc. U. S. Nat. Mus., viii, Apr. 20, 1885, 23 (Yucatan; coll. U. Nat. Mus.).—CHAPMAN, Bull. Am. Mus. N. H., viii, 1896, 278 (Chichen-Itza, Yucatan).

## Genus WILSONIA Bonaparte.

*Wilsonia* BONAPARTE, Geog. and Comp. List, 1838, 23. (Type, *Motacilla mitrata* Gmelin.)

*Myiodiocetes* AUDUBON, Synop. Birds North Am., 1839, 48. (Type, *Motacilla mitrata* Gmelin.)

*Myioctonus* CABANIS, Mus. Hein., i, 1850, 18. (Type, *Motacilla mitrata* Gmelin.)

Small or medium-sized “flycatching” Mniotiltidæ, with bill about half as long as head (or less), moderately depressed; rictal bristles moderately developed, reaching but little beyond nostrils; outermost (ninth) primary longer than fifth; under parts yellow, sometimes with throat black or with black spots or streaks across chest; upper parts plain olive-green or gray, with or without black on crown.

Bill not more than half as long as head (sometimes less), tapering gradually to the tip, the culmen straight to near the tip, where rather strongly decurved; maxillary tomium with subterminal notch distinct; gonys very faintly convex. Nostril longitudinally oval, in lower anterior portion of nasal fossæ, overhung by broad membranous operculum. Rictal bristles distinct, reaching, when extended forward, decidedly but not far beyond nostrils. Wing moderate, pointed (eighth to sixth, usually seventh, primaries longest, ninth longer than fifth); wing-

<sup>1</sup> Ridgway's Nomenclature of Colors, Plate 2.

<sup>2</sup> Two specimens.

<sup>3</sup> One specimen.

tip shorter than tarsus, but decidedly longer than commissure. Tail equal to (*W. canadensis*) or longer than (*W. mitrata*, *W. pusilla*) distance from bend of wing to tips of secondaries, slightly rounded or double-rounded, the rectrices rather narrow, with subacuminate tips. Tarsus decidedly less than to nearly one-third as long as wing, its scutella indistinct (obsolete or fused except on lower portion); middle toe, with claw, decidedly shorter than tarsus; basal phalanx of middle toe united for most of its length to outer toe, for about half its length to inner toe.

*Coloration*.—Under parts yellow (under tail-coverts white in one species), the throat sometimes black or partly black, the chest sometimes streaked or spotted with black; upper parts plain olive-green or gray, with or without black on crown.

*Nidification*.—Terrestrial or subterrestrial (in forest undergrowth).

*Range*.—Whole of North America (except treeless arctic district); south in winter to northern South America, Cuba, and Jamaica; one species,<sup>1</sup> referred to this genus, peculiar to Colombia and Ecuador. (Three, or possibly five, species.)

KEY TO THE SPECIES AND SUBSPECIES OF *WILSONIA*.

- a. Lateral rectrices with inner webs partly white.
  - b. No whitish or yellowish markings on wings. (*Wilsonia mitrata*.)
    - c. Forehead, sides of head, and under parts of body rich yellow; crown, occiput, throat, and chest black. (Eastern United States; south in winter to Cuba, Jamaica, and through eastern Mexico and Central America to Isthmus of Panama.) ..... *Wilsonia mitrata*, adult male (p. 705)
    - cc. Forehead, sides of head, and under parts duller yellow, the first sometimes olive-green; no black on head, throat, or chest, or else the black areas of the adult male imperfectly represented.
      - Wilsonia mitrata*, adult female (p. 706)
  - bb. Two white or yellowish bands across wing. (Eastern United States.)

*Wilsonia microcephala*, adult male? (p. 709)

ee. Smaller (adult male averaging, wing 55.4, tail 49.1; adult female, wing 52.9, tail 47.8); coloration more intense, with upper parts bright yellowish olive-green, the forehead and superciliary region often inclining to orange. (Pacific coast district, north to British Columbia; in winter south to Cape St. Lucas and Sonora, east during migration to eastern Oregon, Arizona, and Chihuahua.) . . *Wilsonia pusilla chryseola* (p. 714)

cc. Forehead and superciliary region yellowish olive-green, the crown similar but less yellowish. (Immature male and female and some adult females.)

d. Duller olive-green above, duller yellow below.

*Wilsonia pusilla pusilla*, immature (see Addenda)

dd. Brighter olive-green above, brighter yellow below.

e. Larger (averaging wing 55.4, tail 48.3); upper parts less yellowish olive-green, under parts less intense yellow.

*Wilsonia pusilla pileolata*, immature (see Addenda)

ee. Smaller (averaging wing 52.9, tail 47.8); upper parts more yellowish olive-green, under parts brighter yellow.

*Wilsonia pusilla chryseola*, immature (see Addenda)

bb. Upper parts gray or grayish olive; under tail-coverts white; larger (wing more than 60). (Eastern North America, south in winter through Mexico and Central America to Peru.)

c. A conspicuous "necklace" of black spots or streaks across chest; feathers of pileum conspicuously centered with black.

*Wilsonia canadensis*, adult male and some adult females (p. 716)

cc. Chest with indistinct olive spots or streaks; feathers of pileum without distinct black centers. . . . . *Wilsonia canadensis*, most adult females and immature male and female (pp. 716, 717)

### WILSONIA MITRATA (Gmelin).

#### HOODED WARBLER.

Inner webs of outermost rectrices partly white; back olive-green, under tail-coverts yellow, and wing exceeding 60 mm.

*Adult male.*<sup>1</sup>—Forehead and anterior portion of crown, together with loreal, orbital, postocular, auricular, suborbital, and malar regions, rich lemon or gamboge yellow, the lores sometimes with a little of dusky or black; rest of head, including throat, together with chest, deep black, that of the chest with an abruptly defined convex posterior outline; hindneck, back, scapulars, lesser wing-coverts, rump, and upper tail-coverts plain yellowish olive-green, the first sometimes slightly tinged with grayish; wings and tail dusky brownish gray with yellowish olive-green edgings, the middle wing-coverts broadly tipped with that color; inner webs of three outermost rectrices extensively white terminally, that on the exterior rectrix occupying more than the terminal half; under parts of body pure rich gamboge or lemon yellow, becoming olive-greenish on sides and flanks, the under tail-coverts paler yellow; under wing-coverts and axillars pale yellow, or white

<sup>1</sup> The coloration is quite the same the year round, except that in autumn and winter specimens the bill (which is nearly black in spring and summer) is more brownish, with the mandible paler than the maxilla, while the yellow of the plumage is often more intense.

tinged with yellow; bill blackish in spring and summer, more brownish, with mandible paler, in fall and winter; iris brown; legs and feet pale brownish in dried skins (pale flesh color in life?); length (skins), 123.2-129.3 (126.2); wing, 65.5-69.1 (67.6); tail, 55.4-59.7 (57.7); exposed culmen, 9.9-11.2 (10.7); tarsus, 19-20.1 (19.7); middle toe, 10.7-12.2 (11.7).<sup>1</sup>

*Adult female*.—Similar to the adult male, but with much less of black on head, sometimes with none; if the black occupies approximately the same area as in the male it is much duller and more or less broken with olive-green on crown and occiput and with yellow on throat; usually, the throat is entirely yellow, sometimes with a more or less distinct indication of a dusky collar across the lower portion or on upper chest, and the crown and occiput are blackish only next to the yellow of forehead and sides of head; when there is no black on the head the pileum is entirely olive-green, becoming more yellowish on forehead; length (skins), 117.3-128.3 (123.7); wing, 60.2-66.8 (63); tail, 52.8-56.4 (53.8); exposed culmen, 9.9-11.2 (10.4); tarsus, 17.8-19.8 (18.8); middle toe, 10.7-11.9 (11.2).<sup>2</sup>

*Young male in first autumn and winter*.—Similar to the adult male, but black of head with feathers narrowly margined with yellowish.<sup>2</sup>

*Young male, first plumage*.—Above uniform light grayish brown, the remiges and rectrices as in adults; middle and greater wing-coverts margined terminally with light wood brown or cinnamon; auricular region olive-yellowish; chin, throat, chest, and anterior portion of sides pale broccoli brown or isabella color; rest of under parts pale straw yellow, clouded with pale brown.

Eastern United States, west to edge of the Great Plains; breeding northward to Connecticut (Suffield, etc.), southeastern New York (near Hudson Valley, east of New York City, etc.).



*Motacilla mitrata* LESSON, *Traité d'Orn.*, 1831, 418.

[*Sylvia*] *mitrata* LATHAM, *Index Orn.*, ii, 1790, 528.

*Sylvia mitrata* VIEILLOT, *Ois. Am. Sept.*, ii, 1807, 23, pl. 77; *Nouv. Dict. d'Hist. Nat.*, xi, 1817, 253.—BONAPARTE, *Journ. Ac. Nat. Sci. Phila.*, iv, 1824, 178; *Ann. Lyc. N. Y.*, ii, 1826, 79.—NUTTALL, *Man. Orn. U. S. and Can.*, i, 1832, 373.—AUDUBON, *Orn. Biog.*, ii, 1834, 68, pl. 60.

*Setophaga mitrata* JARDINE, ed. *Wilson's Am. Orn.*, i, 1832, 389.—RICHARDSON, *Rep. Brit. Assoc. for 1836 (1837)*, 172.—D'ORBIGNY, in *La Sagra's, Hist. Nat. Cuba, Ois.*, 1839, 89.—HOY, *Proc. Ac. Nat. Sci. Phila.*, vi, 1853, 309 (Wisconsin).—BREWER, *Proc. Bost. Soc. N. H.*, vii, 1860, 307 (Cuba).

*S[etophaga] mitrata* GRAY, *Gen. Birds*, i, 1846, 265.

[*Setophaga*] *mitrata* GRAY, *Hand-list*, i, 1869, 244, no. 3534.

*Wilsonia mitrata* BONAPARTE, *Geog. and Comp. List*, 1838, 23.—ALLEN, *Proc. Essex Inst.*, iv., 1864, 83 (Massachusetts); *Bull. Mus. Comp. Zool.*, iii, 1872, 175 (Kansas).—COUES, *Bull. Nutt. Orn. Club*, v, 1880, 95.—STEJNEGER, *Auk*, i, 1884, 231.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, *Auk*, xvi, 1899, 123 (Check List no. 684).—HOWE, *Auk*, xvi, 1899, 360 (Montville, Connecticut, 1 spec., June 18); xvii, 1900, 389 (Gales Ferry, Connecticut, June 23, 24).—BAGG, *Auk*, xvii, 1900, 178 (Oneida Co.; New York, breeding).—BEYER, *Proc. Louis. Soc. Nat. for 1897-99 (1900)*, 115 (Louisiana, breeding).—COMEY, *Auk*, xviii, 1901, 397 (Cambridge, Massachusetts, 1 spec., Sept. 5, 1901).

*Sylvania mitrata* NUTTALL, *Man. Orn. U. S. and Can.*, 2d ed., i, 1840, 333.—WOODHOUSE, in *Rep. Sitgreaves's Expl. Zúñi and Col. R.*, 1853, 69 (Indian Territory and Texas).—RIDGWAY, *Proc. U. S. Nat. Mus.*, viii, 1885, 564 (Cozumel I., Yucatan); *Orn. Illinois*, i, 1889, 174.—CORY, *Auk*, iii, 1886, 46 (West Indian references); *Birds W. I.*, 1889, 60; *Cat. W. I. Birds*, 1892, 120 (Cuba; Jamaica).—AMERICAN ORNITHOLOGISTS' UNION, *Check List*, 1886, no. 684.—ALLEN, *Bull. Am. Mus. N. H.*, i, 1886, 259 (Brookline, Massachusetts, 1 spec., June 25, 1879).—BECKHAM, *Proc. U. S. Nat. Mus.*, x, 1888, 688 (San Antonio, Texas, Dec. 21).—DUTCHER, *Auk*, vi, 1888, 139 (Fire Island Light, Long Island, 1 spec., Sept. 1); x, 1893, 277 (Long Island, 2 specs).—COOKE, *Bird Migr. Miss. Val.*, 1888, 261 (s. Nebraska; e. Kansas, breeding, etc.; dates).—SCOTT, *Auk*, vii, 1890, 22 (Tarpon Springs, Florida, late Mar. to about third week in Apr., rare in fall; Key West, Mar. 18 to Apr. 3, Aug. 19 to Sept. 13).—LOOMIS, *Auk*, vii, 1890, 129 (Pickens Co., South Carolina, breeding up to 2,500 ft.); viii, 1891, 332 (Cæsars Head, South Carolina, breeding up to a little above 2,500 ft.).—HITCHCOCK, *Auk*, vii, 1890, 407 (Provincetown, Massachusetts, June 25).—GOSS, *Hist. Birds Kansas*, 1891, 586 (e. Kansas, summer resid.).—HOWELL, *Auk*, ix, 1892, 306 (Parkville, Long Island, 1 spec., Apr. 30).—NEHRLING, *Our Native Birds, etc.*, i, 1893, 263, pl. 14, fig. 3.—RICHMOND, *Proc. U. S. Nat. Mus.*, xvi, 1893, 485 (Rio Escondido and Greytown, Nicaragua, Sept. 24 to Feb. 5).—MCLWRAITH, *Birds of Ontario*, 1894, 381 (near Hamilton, 1 spec., May, and near Port Rowan, occasional).—PALMER, *Auk*, xi, 1894, 282-291 (plumages).—TUTTLE, *Auk*, xii, 1895, 191 (Erie Co., Ohio, Apr. 23).—WAYNE, *Auk*, xii, 1895, 365 (Wacissa R., n. w. Florida, breeding).—EASTMAN, *Auk*, xiv, 1897, 327 (Framingham, Massachusetts, 1 spec., Oct. 15, 1893).—RHODES, *Auk*, xvi, 1899, 313 (Westmoreland Co., w. Pennsylvania, May, rare).—DANIEL, *Auk*, xix, 1902, 18 (Dismal Swamp, Virginia, breeding).

[*Sylvania*] *mitrata* CORY, *List Birds W. I.*, 1885, 9.

*S[y]lvania mitrata* RIDGWAY, *Man. N. Am. Birds*, 1887, 527,

*Myiodioides mitrata* AUDUBON, *Birds Am.*, oct. ed., ii, 1841, 12, pl. 71.

[*Myiodioides*] *mitrata* BONAPARTE, *Consp. Av.*, i, 1850, 315.

*Myiodioides mitratus* JARDINE, *Contr. Orn.*, 1848, 13 (Bermudas, Mar. 30).—HURDIS, *Jardine's Contr. Orn.*, 1850, 13 (Bermudas; same occurrence).—

SCLATER, *Proc. Zool. Soc. Lond.*, 1856, 291 (Cordova, Vera Cruz); *Cat. Am. Birds*, 1862, 33.—BAIRD, *Rep. Pacific R. R. Surv.*, ix, 1858, 292; *Cat. N. Am. Birds*, 1859, no. 211; *Review Am. Birds*, 1865, 239.—SCLATER and SALVIN, *Ibis*, 1859, 11 (Guatemala; Honduras); *Proc. Zool. Soc. Lond.*, 1864, 347 (Panama R. R.).—MARTENS, *Journ. für Orn.*, 1859, 212 (Bermudas).—TAYLOR, *Ibis*, 1860, 110 (Comayagua, Honduras).—BLAND, *Ann. Rep. Smithsonian Inst. for 1859 (1860)*, 287 (Bermudas).—GRUNDLACH, *Journ. für Orn.*, 1861, 326 (Cuba); 1872, 419 (do.); *Repert. Fisico-Nat. Cuba, Ois.*, 1865, 237; *Orn. Cuba*, 1873, 71.—DRESSER, *Ibis*, 1865, 478 (San Antonio, Texas, migr.).—LAWRENCE, *Ann. Lyc. N. Y.*, viii, 1863, 484 (Panama R. R.). ix, 1869, 200 (Merida, Yucatan).—SCHWICHRANT, *Mem. Bost. Soc. N. H.*, i, 1869, 547 (Orizaba, Vera Cruz, winter).—SNOW, *Birds Kansas*, 1873, 5 (Fort Leavenworth).—COUES, *Check List*, 1873, no. 101; 2d ed., 1882, no. 146; *Birds N. W.*, 1874, 78; *Birds Col. Val.*, 1878, 324 (synonymy).—TRIPPE, *Proc. Bost. Soc. N. H.*, xv, 1873, 235 (Mahaska Co., s. Iowa, 1 spec.).—BAIRD, BREWER, and RIDGWAY, *Hist. N. Am. Birds*, i, 1874, 314, pl. 15, figs. 10, 11. BREWSTER, *Ann. Lyc. N. Y.*, xi, 1875, 138 (Ritchie Co., West Virginia; habits; song).—BREWER, *Proc. Bost. Soc. N. H.*, xvii, 1875, 440 (Connecticut); xix, 1878, 303 (Connecticut, summer resid.).—MERRIAM, *Trans. Conn. Ac.*, i, 1877, 25 (Connecticut); *Bull. Nutt. Orn. Club*, iv, 1879, 7 (Lewis Co., New York, 1 spec., Sept. 9).—NELSON, *Bull. Nutt. Orn. Club*, i, 1876, 42 (near Chicago, May 10; Waukegan, May 20).—PURDIE, *Bull. Nutt. Orn. Club*, ii, 1877, 21 (Suffield, Connecticut, 1 spec.).—MEARS, *Bull. Nutt. Orn. Club*, ii, 1877, 71, 72 (plumage of female).—BICKNELL, *Bull. Nutt. Orn. Club*, iii, 1878, 130 (Riverdale, New York, breeding; Fort Lee, New Jersey, breeding); *Auk*, i, 1884, 216 (song).—RIDGWAY, *Bull. Nutt. Orn. Club*, iii, 1878, 164 (Mount Carmel, Illinois, breeding); *Nom. N. Am. Birds*, 1881, no. 124.—BROWN (N. C.), *Bull. Nutt. Orn. Club*, iii, 1878, 174 (Coosada, Alabama, breeding).—RATHBUN, *Revised List Birds Centr. New York*, 1879, 14 (Cayuga and Wayne counties, breeding, common).—DEANE, *Bull. Nutt. Orn. Club*, v, 1880, 117 (Brookline, Massachusetts, 1 spec., June).—SALVIN and GODMAN, *Biol. Centr.-Am., Aves*, i, 1881, 167 (Izamal, Yucatan; Belize, British Honduras; Retalhuleu, Dueñas, Coban, and Chetumal, Guatemala; etc.).—*Proc. Zool. Soc. Lond.*, 1883, 341.

## WILSONIA MICROCEPHALA Ridgway.

## SMALL-HEADED WARBLER.

Olive-green above, yellowish beneath, the wing with two whitish bands and inner webs of lateral rectrices partly white.

*Adult male* (?).—"Upper parts dull olive-yellow; the wings dusky brown, edged with lighter; the greater and lesser [i. e., middle] coverts tipped with white; the lower parts dirty white, stained with dull yellow, particularly on the upper parts of the breast; the tail dusky brown, the two exterior feathers marked like those of many others, with a spot of white on the inner vanes; head remarkably small; bill broad at the base, furnished with bristles, and notched near the tip; legs dark brown; feet yellowish; eye dark hazel."<sup>1</sup> Total length, 127; extent of wings, 209.5.

Pennsylvania and New Jersey; also, according to Audubon, Kentucky.

I am unable to satisfactorily dispose of this hypothetical species by reference to any other, the peculiar combination of characters indicated in the original description, quoted above, being shared by no other bird to my knowledge.<sup>2</sup>

*Muscicapa minuta* (not of Gmelin) WILSON, Am. Orn., vi, 1812, 62, pl. 50, fig. 5 (New Jersey, etc.).—BONAPARTE, Journ. Ac. Nat. Sci. Phila., ii, 1824, 179.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 296.—AUDUBON, Orn. Biog., v, 1839, 291, pl. 434, fig. 2; Synopsis, 1839, 44; Birds Am., oct. ed., i, 1840, 238, pl. 67.—(?) PEABODY, Rep. Orn. Mass., 1839, 296 (Massachusetts).—(?) PUTNAM, Proc. Essex Inst., i, 1856, 226.

*Sylvia minuta* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 197.

*Wilsonia minuta* BONAPARTE, Geog. and Comp. List, 1838, 23.—ALLEN, Proc. Essex Inst., iv, 1864, 83; Am. Nat., iii, 1869, 577.—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 174, 234.—STEINEGER, Auk, i, 1884, 231.

*Setophaga minuta* RICHARDSON, Rep. Brit. Assoc. for 1836 (1837), 172.—(?) HOY, Proc. Ac. Nat. Sci. Phila., 1853, 309 (Wisconsin).

[*Setophaga*] *minuta* GRAY, Hand-list, i, 1869, 244, no. 3537.

*Myiodioides minutus* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 293; Cat. N. Am. Birds, 1859, no. 212; Review Am. Birds, 1865, 241.—TURNBULL, Birds E. Penn., 1869, 53 (Phila. ed., p. 42).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 316, pl. 16, fig. 2.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 440 (Wenham, Massachusetts).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 126.—MAYNARD, Birds E. N. Am., 1882, 521.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 431, footnote.

*Myiodioides? minutus* COUES, Birds Col. Val., 1878, 326 (synonymy; crit.).

*Muscicapa* or *Myiodioides* "*minuta*" COUES, Proc. Essex Inst., v, 1868, 275.

*S[ylvia] minuta* RIDGWAY, Man. N. Am. Birds, 1887, 527.

*Sylvania pumilia* (not *Sylvia pumilia* Vieillot, 1807) NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 334 (cites *Sylvia pumilia* Vieillot<sup>3</sup> and *Muscicapa minuta* Wilson).

<sup>1</sup> Wilson's original description.

<sup>2</sup> See Baird, Rep. Pacific R. R. Surv., ix, 293; Coues, Birds Col. Val., 326.

<sup>3</sup> *Sylvia pumilia* Vieillot (Ois. Am. Sept., ii, 1807, 39, pl. 100) I am unable to identify with any American bird; certainly it is not the same as *Muscicapa minuta* Wilson.

*Sylvania microcephala* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1865, 354 (substitute for names *minuta* and *pumilia*, preoccupied).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, 357 (Hypothetical List, no. 25).  
*S[yvania] microcephala* RIDGWAY, Man. N. Am. Birds, 1887, 527.

## WILSONIA PUSILLA PUSILLA (Wilson).

## WILSON'S WARBLER.

*Adult male*.—Forehead, superciliary region, orbital region, and entire under parts gamboge or lemon yellow, the sides and flanks slightly tinged with olive-green; crown glossy blue-black, the feathers slightly elongated, distinctly outlined; rest of upper parts uniform olive-green. the auricular region and sides of neck similar but rather more yellowish; maxilla dark brown, more blackish terminally; mandible paler brown, especially toward base; iris brown; legs and feet light brownish; length (skins), 103–113 (108.4); wing, 53–57.5 (55.6); tail, 46.5–50.1 (48.1); exposed culmen, 7–9 (8); tarsus, 17–19 (18.2).<sup>1</sup>

*Adult female*.—Similar to the adult male and often not distinguishable; usually, however, slightly duller in color, with black crown-patch more restricted or more or less obscured by olive-green tips or margins to the feathers; sometimes the black entirely absent, the whole pileum, except forehead, being olive-green, the forehead and superciliary region yellow; length (skins), 104–113 (107.2); wing, 52–55 (53.6); tail, 46–49.5 (47.5); exposed culmen, 8–9 (8.4); tarsus, 17–18.5 (17.9).<sup>2</sup>

Eastern North America; north to Newfoundland, Labrador (Eskimo River), shores of Hudson Bay, and Manitoba; west to eastern edge of the Great Plains; breeding southward to Nova Scotia, New Brunswick, Maine, Massachusetts, Ontario (Ottawa), etc.; in winter south to Santa Domingo and eastern Mexico in States of Vera Cruz, Yucatan,

and dates).—(?) THOMPSON, Proc. U. S. Nat. Mus., xiii, 1890, 624 (Manitoba, breeding).—NEHRLING, Orn. Native Birds, etc., i, 1893, 273, pl. 13, fig. 8.—McILWRAITH, Birds Ontario, 1894, 382 (Ottawa, breeding).

[*Myiodioides*] *pusilla* BONAPARTE, Consp. Av., i, 1850, 315.

*Myiodioides pusillus* BAIRD, Lit. Rec. and Journ. Linn. Assoc. Penn. Coll., i, Oct., 1845, 252; Rep. Pacific R. R. Surv., ix, 1858, 293, part; Cat. N. Am. Birds, 1859, no. 213, part; Review Am. Birds, 1865, 240, part.—(?) SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Cordova, Vera Cruz); 1859, 263 (Jalapa, Vera Cruz).—(?) SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 547 (Vera Cruz, in winter).—COUES, Check List, 1873, no. 102, part; 2d ed., 1882, no. 147; Birds N. W., 1874, 79, part; Birds Col. Val., 1878, 326, part.—SALVIN, Ibis, 1873, 334 (Santo Domingo).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 317, part, pl. 16, figs. 3, 4.—BREWER, Proc. Bost. Soc. N. H., xvii, 1875, 440 (Maine, breeding).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 125.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 168, part.—BATCHELDER, Bull. Nutt. Orn. Club, vii, 1882, 110 (upper St. Johns R., Maine and New Brunswick, breeding).—BREWSTER, Proc. Bost. Soc. N. H., xxii, 1883, 371 (Anticosti I., breeding).—STEARNS, Proc. U. S. Nat. Mus., vi, 1883, 117 (Eskimo R., Labrador, breeding).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 435, part.

[*Myiodioides*] *pusillus* COUES, Key N. Am. Birds, 1872, 109, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

*M[yiodioides] pusillus* COUES, Key N. Am. Birds, 2d ed., 1884, 313, part.

*M[yiodioides] pusillus* JORDAN, Man. Vertebr. E. U. S., 4th ed., 1884, 69.

(?) *Myiodioides pusillus* SCLATER, Proc. Zool. Soc. Lond., 1858, 299 (La Parada, Oaxaca, Jan.).

*Myiodioides pusillus* var. *pusillus* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 457, part.

[*Myiodioides pusillus*.]  $\alpha$ . *M. pusillus* SHARPE, Cat. Birds Brit. Mus., x, 1885, 436, over list of specimens, part.

[*Myiodioides pusillus*] var. *pusillus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 313, part.

*Sylvia wilsonii* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 179; Ann. Lyc. N. Y., ii, 1826, 86.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 408.

*Setophaga wilsonii* JARDINE, ed. Wilson's Am. Orn., i, 1832, 391.

*Muscicapa wilsonii* AUDUBON, Orn. Biog., ii, 1834, 148, pl. 124.—PEABODY, Rep. Orn. Mass., 1839, 297.

*Myiodioides wilsonii* AUDUBON, Synopsis, 1839, 50; Birds Am., oct. ed., ii, 1841, 21, pl. 75 (Labrador; Newfoundland).—PUTNAM, Proc. Essex Inst., i, 1856, 206 (Massachusetts; breeding?).—WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 282 (Nova Scotia).

*Sylvania wilsonii* WOODHOUSE, in Rep. Sitgreaves' Expl. Zúñi and Col. R., 1853, 69 (Indian Territory; Texas).

(?) *Sylvia petasodes* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 2 (Mexico<sup>1</sup>); see Journ. für Orn. 1863, 57.

(?) *Abrornis atricapilla* BLYTH, Ibis, 1870, 169 ("China"; see Finsch, Proc. Zool. Soc. Lond., 1875, 640, 641<sup>1</sup>).

<sup>1</sup> The interrogation mark indicates doubt as to whether Lichtenstein's and Blyth's birds are true *W. p. pusilla* or the western form (*W. p. pileolata*).

## WILSONIA PUSILLA PILEOLATA (Pallas).

## PILEOLATED WARBLER.

Similar to *W. p. pusilla*, but averaging larger; coloration brighter, the upper parts more yellowish olive-green, the yellow of under parts brighter.

*Adult male*.—Length (skins), 105–114 (109); wing, 55–60 (57.5); tail, 47–52 (50.1); exposed culmen, 7–9 (8.3); tarsus, 18–20 (18.9).<sup>1</sup>

*Adult female*.—Length (skins), 105–116 (109.2); wing, 54.5–57 (55.4); tail, 47.5–50 (48.3); exposed culmen, 7.5–9 (8.5); tarsus, 18–19.5 (18.8).<sup>2</sup>

Western North America; breeding throughout the Rocky Mountain district, from western Texas (Chisos Mountains), New Mexico ?, and Arizona ?, in higher mountains, northward to Alaska, including coast district (Kadiak, Yakutat, Sitka, etc.) as well as throughout the interior, westward to eastern Oregon (Fort Klamath; Tillamook) and Queen Charlotte Islands, British Columbia; during migration over the whole of western North America (less commonly along the Pacific coast of United States ?), and eastward across the Great Plains to Minnesota (Fort Snelling, May), western Missouri (Independence), etc.; in winter southward over whole of Mexico and Central America to Chiriqui (Boquete).

*Motacilla pileolata* PALLAS, Zoogr. Rosso-Asiat., i, 1826, 497 (Kadiak Island, Alaska).

*Myiodiodes pusillus* var. *pileolata* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 457, part; Am. Nat., vii, 1873, 608, part (diagnosis, etc.).

*Myiodiodes pusillus* var. *pileolatus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 319, part.—LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 16 (Guichilevi, Chiapas).

- (?) *Myiodiocetes pusillus pileolatus* MEARNs, Bull. Nutt. Orn. Club, iv, 1879, 164 (Fort Klamath, Oregon, Apr.).
- Myiodiocetes pusillus pileolatus* MINOT, Bull. Nutt. Orn. Club, v, 1880, 228 (Seven Lakes, Colorado, breeding).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 125a, part.—COUES, Check List, 2d ed., 1882, no. 148, part.—BEAN, Proc. U. S. Nat. Mus., v, 1882, 147 (Yakutat and Kadiak, Alaska).—ALLEN and BREWSTER, Bull. Nutt. Orn. Club, viii, 1883, 159 (Colorado Springs, Colorado, after May 12).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 61 (Boquete, Chiriqui, Jan. 16 to 24).
- Myiodiocetes pusillus* var. *pileolata* COUES, Check List, 1873, App., p. 125, no. 102a, part.
- Wilsonia pusilla pileolata* COUES, Bull. Nutt. Orn. Club, v, Apr., 1880, 95, part.—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 174, part.—NELSON, N. Am. Fauna, no. 14, 1899, 60 (Tres Marias).—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xvi, 1899, 123.—OSGOOD, N. Am. Fauna, no. 21, 1901, 49 (Queen Charlotte Islands, British Columbia, breeding).
- Sylvania pusilla pileolata* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 354, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 685a, part.—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 204 (coast of Alaska).—(?) SCOTT, Auk, v, 1888, 36 (Santa Catalina Mts., Arizona, migrant).—(?) MERRILL, Auk, v, 1888, 362 (Fort Klamath, Oregon, breeding).—CHERRIE, Auk, vii, 1890, 337 (San José, Costa Rica, Oct. 27 to Mar. 6).—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 55, part (Vancouver I., etc., British Columbia; crit.); Auk, x, 1893, 23, part (do.; see Auk, xi, 1894, 50).—JOUY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (Juanacatlan, Jalisco, Jan.).—GRINNELL, Auk, xv, 1898, 129 (Sitka, Alaska).
- S[ylvania] pusilla pileolata* RIDGWAY, Man. N. Am. Birds, 1887, 528, part.
- M[yiodiocetes p[usillus] pileolatus* COUES, Key N. Am. Birds, 2d ed., 1884, 314, part.
- [*Myiodiocetes pusillus*.]  $\beta$ . *M. pileolatus* SHARPE, Cat. Birds Brit. Mus., x, 1885, 437, in list of specimens (Presidio, Sinaloa; Guatemala; Irazú district and Barranca, Costa Rica; Volcan de Chiriqui, etc.).
- Muscicapa pusilla* (not of Wilson) HENRY, Proc. Ac. Nat. Sci. Phila., vii, 1855, 308 (New Mexico).
- Sylvania pusilla* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 335, part.—GAMBEL, Journ. Ac. Nat. Sci. Phila., i, 1847, 38, part (Rocky Mts).—NELSON, Rep. Nat. Hist. Coll. Alaska, 1887, 204 (Yukon Valley, Norton Sound, Kotzebue Sound, etc.).—TOWNSEND, Auk, iv, 1887, 13 (Kowak R., Alaska).
- Wilsonia pusilla* ALLEN, Bull. Mus. Comp. Zool., iii, 1872, 175 (Colorado, breeding from 8,000 ft. to timber line; Wyoming; Utah).
- (?) *Myiodiocetes pusillus* SCLATER and SALVIN, Ibis, 1859, 11 (Dueñas, Guatemala).—CABANIS, Journ. für Orn., 1860, 325 (Costa Rica).—BLAKISTON, Ibis, 1863, 63 (Mackenzie R.).—LORD, Proc. Roy. Art. Inst., iv, 1864, 115, part (British Columbia).—DRESSER, Ibis, 1865, 478 (Texas).—FRANTZIUS, Journ. für Orn., 1869, 294 (Costa Rica).—SCLATER, Cat. Am. Birds, 1862, 34 (Mexico); Proc. Zool. Soc. Lond., 1869, 374 (Oaxaca).—SALVIN, Proc. Zool. Soc. Lond., 1870, 183 (Volcan de Chiriqui).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (Costa Rica).
- Myiodiocetes pusillus* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 293, part; Cat. N. Am. Birds, 1859, no. 213, part; Rep. U. S. and Mex. Bound. Surv., ii, pt. 2, 1859, 10 (Frontera, Texas; Monterey, Nueva Leon); Review Am. Birds, 1865, 240, part.—COUES, Proc. Ac. Nat. Sci. Phila., 1866, 71 (Fort Whipple, Arizona, breeding in mountains); Check List, 1873, no. 102, part; 2d ed., 1882, no. 147; Birds N. W., 1874, 79, part; Birds Col. Val., 1878, 326, part.—LAW-

SENCE, Ann. Lyc. N. Y., ix, 1868, 95 (Barranca, Grecia, and San José, Costa Rica); Mem. Bost. Soc. N. H., ii, 1874, 270 (Guadalajara, Jalisco; Tepic; Colima).—BUTLER, Proc. Ac. Nat. Sci. Phila., 1868, 149 (Laredo, Texas).—DALL and BANNISTER, Trans. Chicago Ac. Sci., i, 1869, 278 (Yukon R., Kodiak, and Sitka, Alaska).—COOPER, Orn. Cal., 1870, 101, part.—AIKEN, Proc. Bost. Soc. N. H., 1872, 197 (Colorado, May).—FISCH, Abh. Nat. Brem., iii, 1872, 36 (Alexandrovsk, Alaska).—TRIPPE, in Coues Birds N. W., 1874, 232 (Colorado, breeding near timber line).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 317, part.—HENSCHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 59 (Denver, Colorado, May 14), 75 (South Park, Colorado, June 24, and Garland, May 28), 103 (Apache and Bowie, Arizona, Sept., Oct.); Zool. Exp. W. 100th Merid., 1875, 207, excl. syn., part.—RIDGWAY, Bull. Essex Inst., vii, 1875, 32 (Wasatch Mts., Utah, breeding).—NELSON, Proc. Bost. Soc. N. H., xviii, 1875, 343 (mountains s. of Fort Bridger, Wyoming, summer).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 168, part.—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 494 (Irazú, Costa Rica).—MCLENNAN, Cruise "Corwin," 1884, 114 (Kowak R., Alaska).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 435, part.

[*Myiodiastes*] *pusillus* COUES, Key N. Am. Birds, 1872, 109, part.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

(?) [*Myiodiastes pusillus* SCLATER, Proc. Zool. Soc. Lond., 1858, 299 (La Parada, Oaxaca).

*Myiodiastes pusillus* var. *pusillus* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 457, part.

[*Myiodiastes pusillus*] α. *pusillus* RIDGWAY, Orn. 40th Parallel, 1877, 437 (West Humboldt and East Humboldt mountains, Nevada, Aug., Sept.; Antelope I., Utah, May 24).

(?) [*Myiodiastes pusillus*] α. *M. pusillus* SHARPE, Cat. Birds Brit. Mus., x, 1885, 436, in list of specimens, part (Oaxaca; Hueñas and Coban, Guatemala; Irazú district, Costa Rica).

[*Myiodiastes pusillus*] var. *pusillus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 313, part.

(?) *M[yoctonus] pusillus* CABANIS, Mus. Hein., i, 1850, 18 (Mexico).



Oregon (Fort Klamath, May, August), Arizona (Pinal County, September, October; Lowell, April; Fort Verde, May; San Francisco Mountains, August 31; Cienega; Tucson), Chihuahua (San Diego, April 15), Sonora (San José Mountains, October), and Lower California (to Cape St. Lucas).

(?) *Sylvania pusilla* (not *Muscicapa pusilla* Wilson) NUTTALL, Man. Orn. U. S. and Can., 2d ed., 1840, 335, part (Oregon).

*Sylvania pusilla* GAMBEL, Journ. Ac. Nat. Sci. Phila., i, 1847, 38, part (California).

*Myiodioctes pusillus* BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 293, part; Cat. N. Am. Birds, 1859, no. 213, part; Review Am. Birds, 1865, 240, part.—HEERMANN, Rep. Pacific R. R. Surv., x, 1859, 39 (California).—(?) XANTUS, Proc. Ac. Nat. Sci. Phila., xi, 1859, 191 (Fort Tejon, California).—COOPER and SUCKLEY, Rep. Pacific R. R. Surv., xii, pt. 2, 1860, 182 (Fort Steilacoom, Washington).—(?) LORD, Proc. Roy. Art. Inst. Woolwich, iv, 1864, 115, part (British Columbia).—COOPER, Orn. Cal., 1870, 101, part.—COUES, Check List, 1873, no. 102, part; Birds N. W., 1874, 79, part; Birds Col. Val., 1878, 326, part.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 435, part.

[*Myiodioctes*] *pusillus* COUES, Key N. Am. Birds, 1872, 109, part.

*Myiodioctes pusillus* var. *pileolata* RIDGWAY, Am. Journ. Sci., iv, Dec., 1872, 457, part; Am. Nat., vii, 1873, 608, part.

*Myiodioctes pusillus*, var. *pileolatus* BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 319, part.—(?) HENSHAW, Rep. Orn. Specs. Wheeler's Surv., 1876, 234 (Fort Tejon and Mount Whitney, California, Aug., Sept.).

*Myiodioctes pusillus pileolatus* BREWSTER, Bull. Nutt. Orn. Club, iv, Jan., 1879, 40 (Nicasio, Marin Co., California; descr. young female); vii, 1882, 139 (Cienega, Tucson, etc., Arizona; crit.)—RIDGWAY, Nom. N. Am. Birds, 1881, no. 125a, part.—COUES, Check List, 2d ed., 1882, no. 148, part.

[*Myiodioctes*] *p[usillus] pileolatus* COUES, Key N. Am. Birds, 2d ed., 1884, 314, part.

*Myiodioctes pusillus* . . . var. *pileolata* COUES, Check List, 1873, App., p. 125, no. 102a, part.

*Myiodioctes pusillus*,  $\beta$ . *pileolata* RIDGWAY, Proc. U. S. Nat. Mus., i, March 21, 1879, 407 (central California).

*Wilsonia pusilla pileolata* COUES, Bull. Nutt. Orn. Club, v, 1880, 95, part.—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 174 part.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xvi, 1899, 123, part.—KOBBE, Auk, xvii, 1900, 357 (Cape Disappointment, Washington, breeding).—MAILLARD, Condor, iii, 1901, 126 (San Benito Co., California, breeding).

(?) *Myiodioctes pileolatus* RIDGWAY, Proc. U. S. Nat. Mus., i, March 20, 1879, 391 (Calaveras Co., California).

*Sylvania pusilla pileolata* RIDGWAY, Proc. U. S. Nat. Mus., viii, Sept. 2, 1885, 354, part.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 685a, part.—EVERMANN, Auk, iii, 1886, 185 (Ventura Co., California, breeding).—BELDING, Land Birds Pacific Distr., 1890, 20) breeding at Poway, San Bernardino Valley, Los Angeles, Santa Cruz, etc., California).—RHODES, Proc. Ac. Nat. Sci. Phila., 1893, 55, part (Vancouver I., British Columbia; crit.); Auk, x, 1893, 23, part (do.).—GRINNELL, Rep. Birds Santa Barbara I., etc., 1897, 8 (Santa Barbara I., California, May 14–16); Pub. ii, Pasadena Ac. Sci., 1898, 47 (Los Angeles Co., California; summer resid. in willow districts).

[*Sylvania*] *pusilla pileolata* RIDGWAY, Man. N. Am. Birds, 1887, 528, part.

(?) [*Myiodioctes pusillus*.]  $\beta$ . *M. pileolatus* SHARPE, Cat. Birds Brit. Mus., x, 1885, 437, in list of specimens, part (west side Rocky Mts., British Columbia; California).

## WILSONIA CANADENSIS (Linnaeus).

## CANADIAN WARBLER.

Upper parts gray tinged with olive in young and autumnal specimens; under tail-coverts white.

*Adult male.*<sup>1</sup>—Forehead and crown black, the feathers (except sometimes those on forehead) margined with gray, producing a scaled appearance; forehead sometimes with a median line (more or less distinct) of yellowish; rest of upper parts, together with sides of neck and posterior portion of auricular region, plain gray (nearly slate-gray); upper and anterior portion of lores, malar region, and under parts (except under tail-coverts) lemon or canary yellow, the outer portion of sides and flanks slightly tinged with olive; under tail-coverts white, sometimes tinged with yellow toward anal region; a conspicuous orbital ring of white or yellowish white, more decidedly yellowish on upper portion; loreal spot, suborbital region, together with anterior and lower portion of auricular region, black; this continued (sometimes brokenly) along sides of lower neck (between the gray and the yellow) and continued across the chest in a series of spots or streaks;<sup>2</sup> bill dusky horn color, the mandible paler, except (sometimes) at tip; iris brown; legs and feet pale buffy brown (in dried skins); length (skins), 121-131.3 (125.7); wing, 64.5-67.1 (66.3); tail, 54.6-57.4 (56.1); exposed culmen, 10.2-11.2 (10.7); tarsus, 18-19.6 (19); middle toe, 10.7-11.9 (11.2).<sup>3</sup>

*Adult female.*—Above, including auricular region and sides of neck, plain gray, tinged with olive, especially on back and pileum, the latter often showing darker centers to feathers of forehead or forehead and



(52.6); exposed culmen, 9.9–11.4 (10.7); tarsus, 17.8–19 (18.3); middle toe, 9.4–11.7 (10.7).<sup>1</sup>

*Immature male in first autumn and winter.*—Quite similar in coloration to the adult female.

*Immature female in first autumn and winter.*—Similar to the adult female and immature male, but upper parts more strongly tinged with olive, and markings on chest much less distinct, sometimes obsolete.

*Young, first plumage.*—Above plain broccoli brown or drab, the feathers ash gray beneath the surface; middle and greater wing-coverts broadly tipped with buff, forming two distinct bands across wing; remiges and rectrices brownish gray, with edges slightly paler; sides of head and neck, chin, throat, chest, and sides of breast pale buffy brown; rest of under parts pale straw or primrose yellow.

Eastern North America; north to Newfoundland, southern Labrador and Manitoba (Lake Winnipeg); west to eastern edge of the Great Plains, casually to Colorado (Lincoln County, May 23); breeding southward to Massachusetts (Winchendon; Berkshire County; Essex County), central New York (Oneida County), southern Ontario, Michigan (Mackinac Island), and Minnesota (St. Louis and Lake counties), and southward through mountains of Pennsylvania, Virginia, and West Virginia to North Carolina (2,500 to 4,000 feet); in winter south through eastern Mexico and Central America to Ecuador (numerous localities and records) and Peru.

[*Muscicapa*] *canadensis* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 327 (based on *Gobemouche cendré de Canada*, *Muscicapa canadensis cinerea*, Brisson, Orn. ii, 406, pl. 39, fig. 4).—GMELIN, Syst. Nat., i, pt. ii, 1788, 937.—LATHAM, Index Orn., ii, 1790, 484.

*Muscicapa canadensis* WILSON, Am. Orn., iii, 1811, 100, pl. 26, fig. 2.—STEPHENS, Shaw's Gen. Zool., x, 1817, 350.—VIEILLLOT, Enc. Méth., ii, 1823, 810.—BONAPARTE, Journ. Ac. Nat. Sci. Phila., ii, 1824, 178.—AUDUBON, Orn. Biog., ii, 1834, 17, pl. 103.

*Setophaga canadensis* JARDINE, ed. Wilson's Am. Orn., i, 1832, 358.

*S[etophaga] canadensis* GRAY, Gen. Birds, i, 1846, 265.

[*Setophaga*] *canadensis* GRAY, Hand-list, i, 1869, 244, no. 3536.

*Myiodiocles canadensis* AUDUBON, Synopsis, 1839, 49; Birds Am., oct. ed., ii, 1841, 14, pl. 72.—SCLATER, Proc. Zool. Soc. Lond., 1854, 111 (Quijos, Ecuador); 1855, 143 (Bogota, Colombia); 1858, 64 (Rio Napo, e. Ecuador), 451 (Gualaquiza and Zamora, Ecuador); Cat. Am. Birds, 1862, 34 (Bogota).—PUTNAM, Proc. Essex Inst., i, 1856, 206 (Massachusetts, breeding).—BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 294; Cat. N. Am. Birds, 1859, no. 214; Review Am. Birds, 1865, 239.—SCLATER and SALVIN, Ibis, 1859, 11 (Guatemala).—LAWRENCE, Ann. Lyc. N. Y., vii, 1862, 467 (Panama R. R.); ix, 1868, 95 (Dota Mts., Costa Rica).—BOARDMAN, Proc. Bost. Soc., ix, 1862, 125 (Maine, breeding).—BLAKISTON, Ibis, 1863, 63 (Saskatchewan).—DRESSER, Ibis, 1865, 478 (Texas).—McILWRAITH, Proc. Essex Inst., v, 1866, 86 (Hamilton, Ontario).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 95 (Dota, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869,

<sup>1</sup> Seven specimens.

- 204 (Costa Rica).—COUES, Check List, 1873, no. 103; 2d ed., 1882, no. 146 Birds N. W., 1874, 80; Birds Col. Val., 1878, 323.—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 320, pl. 18, fig. 6.—BREWER, Proc. Bos. Soc. N. H., xvii, 1875, 440 (New England; summer resid.).—BREWSTER, Bul. Nutt. Orn. Club, iii, 1878, 60 (destr. young).—HATCH, Geol. and Nat. Hist Surv. Minn. for 1879 (1880), 160 (St. Louis and Lake counties, Minnesota breeding).—Goss, Bull. Nutt. Orn. Club, vi, 1881, 246 (Neosho R., Kansas Aug. 29).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 127.—SALVIN and GOSMAN, Bol. Centr.-Am., Aves, i, 1881, 166.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 432 (Dueñas, Retalhuleu, Volcan de Fuego, and Coban, Guatemala; Iraz district, Costa Rica; Bogota, Colombia; Narayacu, e. Ecuador; "Mexico," "Brazil").—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 7 (Machay and Mapoto, Ecuador, Nov., Feb.).—SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xv, no. 351, 1899, 8 (Valle del Zamora and Vall del Rio Santiago, e. Ecuador, Dec., Mar.).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 61 (Boquete, Chiriqui, Apr. 7).
- [*Myiodiastes*] *canadensis* COUES, Key N. Am. Birds, 1872, 109.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10.
- M[ylodiastes]* *canadensis* NELSON, Bull. Essex Inst., viii, 1876, 101, 152 (n. e. Illinois, a few breeding).—COUES, Key N. Am. Birds, 2d ed., 1884, 314.
- Dendroica canadensis* (not *Dendroica canadensis* Baird) TACZANOWSKI, Proc. Zool. Soc. Lond., 1874, 508 (centr. Peru); 1879, 223 (Tambillo, n. Peru). (See Taczanowski, Proc. Zool. Soc. Lond., 1882, 6.)
- E[uthlypis]* *canadensis* CABANIS, Mus. Hein., i, 1850, 18.
- Euthlypis canadensis* CABANIS, Journ. für Orn., 1860, 326 (highlands Costa Rica).—ALLEN, Bull. Mus. Comp. Zool., ii, 1871, 269 (e. Florida, Mar.).
- Wilsonia canadensis* COUES, Bull. Nutt. Orn. Club, v, Apr., 1880, 95.—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 174.—AMERICAN ORNITHOLOGISTS' UNION COMMITTEE, Auk, xvi, 1899, 123.—AIKEN, Auk, xvii, 1900, 298 (Lake, Lincoln Co., Colorado; 1 spec., May 23, 1899).
- Sylvania canadensis* RIDGWAY, Proc. U. S. Nat. Mus., Sept. 2, 1885, 354; Orn. Illinois, i, 1889, 176. AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886

Virginia, breeding in spruce belt).—FLEMING, Auk, xviii, 1901, 44 (Muskoka, etc., n. w. Ontario, common summer resid.).

*Sylvia paridalina* BONAPARTE, Journ. Ac. Nat. Sci. Phila., iv, 1824, 179 (cites *M. canadensis* Wilson); Ann. Lyc. N. Y., ii, 1826, 79.—NUTTALL, Man. Orn. U. S. and Can., i, 1832, 372.

*Sylvicola pardalina* BONAPARTE, Geog. and Comp. List, 1838, 22.—BREWER, Proc. Bost. Soc. N. H., vi, 1856, 5 (descr. nest and eggs).

[*Myiodioctes*] *pardalina* BONAPARTE, Consp. Av., i, 1850, 315.

*Myiodioctes pardalina* PRATTEN, Trans. Ills. Agric. Soc., 1855, 601.

*Muscicapa bonapartii* AUDUBON, Orn. Biog., i, 1831, 27, pl. 5 (St. Francisville, Louisiana, Aug. 13;=young in autumn).

*Setophaga bonapartii* SWAINSON and RICHARDSON, Fauna Bor.-Am., ii, 1831, 225, pl. 47.

[*Setophaga*] *bonapartii* GRAY, Hand-list, i, 1869, 244, no. 3538.

*Wilsonia bonapartii* BONAPARTE, Geog. and Comp. List, 1838, 23.—STEJNEGER, Auk, i, 1884, 231.

*Myiodioctes bonapartii* AUDUBON, Synopsis, 1839, 49; Birds Am., oct. ed., ii, 1841, 17, pl. 73.—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 295; Cat. N. Am. Birds, 1859, no. 215.

*Sylvania bonapartii* NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 332.

*Setophaga nigro-cincta* LAFRESNAYE, Rev. Zool., iv, Oct., 1843, 292 (Colombia); 1844, 79.

*Myiodioctes caerulescens* (lapsus for *canadensis*) LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 16 (Barrio, Oaxaca; Guichicovi, Chiapas).

#### Genus CARDELLINA DuBus.

*Cardellina* DuBus, Esquis. Orn., 1850, pl. 25. (Type, *C. amicta* DuBus, = *Muscicapa rubrifrons* Giraud.)

Medium-sized “fly-catching” Mniotiltidæ with the bill short and stout (basal depth nearly equal to basal width, exposed culmen not longer than middle toe without claw), the culmen decidedly curved; rictal bristles reaching but little beyond nostrils; wing-tip equal to tarsus; tail even; rump and under parts of body white, back gray, forehead and throat red, crown and auricular region black.

Bill not more than half as long as head, deeper than broad at anterior margin of nostrils, nearly as deep as broad at base; culmen decidedly curved; maxillary tomium with subterminal notch indistinct; gonys faintly convex. Nostril rather large, obliquely oval, occupying about lower anterior half of nasal fossæ, largely concealed by latero-frontal feathering. Rictal bristles moderately developed, the longest reaching but little beyond nostrils, when directed forward. Wing long, rather pointed (seventh primary longest, eighth and sixth but little shorter, the ninth intermediate between sixth and fifth); wing-tip long, equal to tarsus. Tail decidedly shorter than wing but longer than distance from bend of wing to tip of secondaries, even, the rectrices broad and rounded at tips. Tarsus about one-fourth as long as wing or slightly more, its scutella indistinct or obsolete on outer side; middle toe, with claw, much shorter than tarsus; basal phalanx of middle toe united for nearly its entire length to outer toe, for about half its length to inner toe.

*Coloration*.—Upper parts gray, with a nuchal band and the rump white; crown and auricular region black; forehead, lores, chin, throat, and post-auricular region red; sexes alike.

*Nidification*.—Terrestrial.

*Range*.—Southwestern border of United States to highlands of Guatemala. (Monotypic.)

**CARDELLINA RUBRIFRONS (Giraud).**

**RED-FACED WARBLER.**

*Adult male*.—Forehead, lores, eyelids, suborbital region (except posterior portion), malar region, chin, throat, upper chest, and sides of neck vermilion or poppy red, most intense on forehead; crown, anterior portion of occiput, auricular region, and posterior portion of suborbital region uniform glossy black; a transverse patch or band of white (usually more or less tinged with pink) on nape, partly hidden by the elongated black feathers of occiput; hindneck, back, scapulars, lesser wing-coverts, and upper rump uniform gray (varying from slate-gray to mouse gray); lower rump white, sometimes tinged with pink; upper tail-coverts gray (rather paler than back, often with still paler or even sometimes whitish tips, especially the shorter coverts; larger wing-coverts, remiges, and rectrices dusky gray with slate-gray edgings the middle coverts more or less distinctly and rather broadly tipped with white or pale gray; under parts of body white, more or less strongly tinged with pink, especially on breast, shading into gray on sides of breast and anterior portion of sides; bill brownish, the maxilla darker; legs and feet horn brown (in dried skins); length (skins), 118–135 (124.5); wing, 65.5–70.5 (68.1); tail, 57–61 (59.4); exposed culmen, 8–9 (8.6); tarsus, 17–18.5 (17.7).<sup>1</sup>

*Adult female*.—Same as the adult male, except that the

*Young in first autumn and winter.*<sup>1</sup>—Similar to the duller colored adults, but much duller, the red of throat, etc., paler, inclining to flesh color, white of under parts and nuchal patch tinged with buff or salmon color, and gray of upper parts more brownish.

*Young, first plumage.*—Upper parts, including entire pileum, plain sooty brown, the pileum and hindneck sometimes inclining to prouts brown or raw umber; rump white; upper tail-coverts brownish gray with paler tips; wings grayish dusky with paler grayish edgings, the middle and greater coverts tipped with dull buff or pale brownish buffy, forming two more or less distinct bands; tail as in adults; sides of head like pileum; chin, throat, and chest plain light buffy grayish brown or broccoli brown, the sides of neck similar but more buffy; rest of under parts dull white, shaded on sides (especially sides of breast) with pale brownish gray or grayish brown.

Higher mountains of southern Arizona (Mount Graham, Catalina Mountains, Huachuca Mountains, etc.) and New Mexico (Fort Bayard) and southward over more elevated parts of Mexico to highlands of Guatemala (Volcan de Fuego; Totonicapam).

*Muscicapa rubrifrons* GIRAUD, Sixteen Species Texan Birds, 1841, folio 27, pl. 7, fig. 1 ("Texas").—SCLATER, Proc. Zool. Soc. Lond., 1855, 66 (referred to genus *Cardellina*).

*Setophaga rubrifrons* BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 329 ("Texas").

*Cardellina rubrifrons* SCLATER, Proc. Zool. Soc. Lond., 1855, 66, in text; 1858, 299 (La Parada, Oaxaca); 1859, 374 (Cinco Señores, Oaxaca); Cat. Am. Birds, 1862, 37 (s. Mexico).—BAIRD, Rep. Pacific R. R. Survey, ix, 1858, 306 (synonymy); Review Am. Birds, 1865, 264 (Mexico; Totonicapam, Guatemala).—SALVIN, Ibis, 1866, 192 (Volcan de Fuego and Totonicapam, Guatemala); 1874, 99 (do.).—HENSHAW, Zool. Exp. W. 100th Merid., 1875, 211 (Mount Graham and mountains near Apache, Arizona; breeding habits).—COUES, Birds Col. Val., 1878, 331; Check List, 2d ed., 1882, no. 150.—ALLEN, Bull. Nutt. Orn. Club, v, 1880, 89.—BREWSTER, Bull. Nutt. Orn. Club, vi, 1881, 68 (Fort Bayard, New Mexico, July 16).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 131.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 162.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 408.—SCOTT, Auk, ii, 1885, 353 (Pima Co., Arizona); v, 1888, 36 (Catalina Mts., Arizona).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 690.—PRICE, Auk, v, 1888, 385 (Huachuca Mts., Arizona; breeding habits).—NEHRLING, Our Native Birds, etc., i, 1893, 280, pl. 32, fig. 2.

[*Cardellina*] *rubrifrons* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 11.

C[*ardellina*] *rubrifrons* COUES, Key N. Am. Birds, 2d ed., 1884, 314.—RIDGWAY, Man. N. Am. Birds, 1887, 531.

*Basileuterus rubrifrons* SCLATER, Proc. Zool. Soc. Lond., 1859, 363 (Jalapa, Vera Cruz).

*Cardellina amicta* DU BUS, Esq. Orn., 1850, pl. 25.

[*Cardellina*] *amicta* BONAPARTE, Consp. Av., i, 1850, 312.

[*Setophaga*] *amicta* GRAY, Hand-list, i, 1869, 243, no. 3531.

<sup>1</sup> This plumage apparently retained during the second year.

## Genus SETOPHAGA Swainson.

*Setophaga* SWAINSON, Philos. Mag., new ser., i, May, 1827, 368. (Type, *Muscicapa ruticilla* LINNÆUS.)

*Setophaga* (emendation) LESSON, Man. d'Orn., ii, 1828, 430.

*Sylvania*, part, NUTTALL, Man. Orn. U. S. and Can., i, 1832, 200. (Proposed as a substitute for *Setophaga* Swainson; see COUES, Ank, xiv, 1897, 223.)

Small "fly-catching" Mniotiltidæ with the bill much shorter than head, much depressed, triangular or broadly wedge-shaped in vertical profile, with rictal bristles not reaching nearly to tip; ninth primary longer than fifth; tail decidedly shorter than wing, rounded; adult males (both sexes in one species) black, varied with red (or orange) and white.

Bill about half as long as head, much depressed, broad at base, its vertical profile triangular or broadly wedge-shaped; culmen sharply ridged, straight for basal half or more, strongly decurved terminally; commissure nearly straight, the maxillary tomium with distinct subterminal notch. Nostril longitudinally oval or elliptical, in lower anterior portion of nasal fossæ, overhung by a broad membranous operculum. Rictal bristles conspicuously developed, but not reaching much if any beyond middle of bill (when directed forward). Wing rather long, pointed (ninth to seventh or eighth to sixth primaries longest, the ninth equal to or longer than fifth, sometimes longer than sixth); wing-tip equal to tarsus (*S. ruticilla*) or a little shorter (*S. picta*). Tail shorter than wing, but decidedly longer than distance from bend of wing to tips of secondaries, decidedly rounded, the rectrices rather broad, subacuminate (*S. ruticilla*) or rounded (*S. picta*) at tips. Tarsus slightly less than one-fourth as long as wing, its scutella rather distinct; middle toe, with claw, decidedly shorter than tar-



external structure, certainly not enough to warrant their generic separation. The type species, *S. ruticilla*, has the outermost (ninth) primary sometimes equal to or longer than the sixth, sometimes shorter; in *S. picta* it is much shorter, or only a little longer than the fifth, the eighth, seventh, and sixth primaries being nearly equal and longest, while in *S. ruticilla* the ninth, eighth, and seventh are sometimes, but not always, all longer than the sixth. In *S. picta* the bill is relatively smaller and the rictal bristles relatively somewhat shorter; the rectrices are obtusely rounded at tips, and the sexes are alike in coloration; whereas in *S. ruticilla* the bill and rictal bristles are slightly more developed, the rectrices are subacuminate at tips, and the sexes very different in color.<sup>1</sup>

## KEY TO THE SPECIES AND SUBSPECIES OF SETOPHAGA.

- a. Head, neck, and upper parts black.
  - b. The black glossy; under parts partly red, orange, yellow.
    - c. Basal half or more of secondaries and lateral rectrices pale orange or yellow; middle and greater wing-coverts black; sides of breast orange or yellow; axillars and under wing-coverts orange or yellow; median portion of breast and abdomen white. (Temperate North America, except parts of southwestern portions; West Indies and through Central America to northern South America in winter.).....***Setophaga ruticilla*, adult male (p. 724)**
    - cc. Secondaries wholly black or with white edges; lateral rectrices largely white; middle and greater wing-coverts white; sides of breast black; axillars and under wing-coverts white; median portion of breast and abdomen vermilion red.
      - d. Third rectrix with greater part of its outer web and a large portion of the inner web (at end) white. (Highlands of Mexico, north to southern Arizona, etc.).....***Setophaga picta picta*, adult male and female (p. 728)**
      - dd. Third rectrix with outer web entirely black, the inner web with little if any white. (Highlands of Guatemala and Chiapas.)
        - Setophaga picta guatemalæ*, adult male and female (p. 729)**
    - bb. The black without gloss, more sooty; under parts dusky grayish or sooty, without red, orange, or yellow.
      - c. Third rectrix with more white (as in "d" above).
        - Setophaga picta picta*, young (p. 728)**
      - cc. Third rectrix with little if any white (as in "dd" above).
        - Setophaga picta guatemalæ*, young (p. 729)**
  - aa. Head grayish (paler, almost white, on throat); rest of upper parts olive or olive-grayish (tail blackish or dusky), the basal portion of secondaries and lateral rectrices pale yellow.
    - Setophaga ruticilla*, adult female and young male (pp. 724, 725)**

<sup>1</sup> For at least the first year, the male of *S. ruticilla* resembles the adult female in coloration, two years, or more, being required to complete the full adult livery. In *S. picta*, on the other hand, both sexes molt, in the first autumn, directly from the sooty nestling plumage (without red on under parts) into the adult dress.

## SETOPHAGA RUTICILLA (Linnaeus).

## AMERICAN REDSTART.

*Adult male*.—Head, neck, chest, and upper parts uniform black, with a more or less decided bluish gloss, except on remiges, and rectrices; basal portion of remiges (except two innermost tertials) and more than basal half of rectrices, except two (sometimes only one) middle pairs, pale orange, saturn red, or salmon-pink, this occupying the full width of both webs;<sup>1</sup> a large patch on each side of chest and breast, together with axillars and under wing-coverts, bright saturn red;<sup>2</sup> rest of under parts white, usually with more or less of black between the orange-red lateral patches and the white in middle of breast;<sup>3</sup> longer under tail-coverts sometimes partly black or dusky; bill wholly black in spring and summer, more brownish, with mandible paler brown, in fall and winter;<sup>4</sup> iris brown; legs and feet dark brown or blackish; length (skins), 117-127 (121.3); wing, 61-67 (63.5); tail, 52-58 (55.1); exposed culmen, 7-9 (8.5); tarsus, 17-19 (17.9); middle toe, 9-11 (10.1).<sup>5</sup>

*Adult female*.—Very different from the adult male. Pileum and hindneck plain mouse gray; back, scapulars, and rump plain light olive or grayish olive-green; upper tail-coverts, middle rectrices, and terminal portion or other rectrices dusky; wings dusky (not so dark as dusky portion of tail) with light olive edgings; basal portion of remiges and rectrices (except one or two middle pairs of the latter and two innermost secondaries) light yellow, that on the remiges more restricted than the orange-red in the male, often not showing at all on primaries; sides of head paler gray than pileum, especially the lores and superciliary region; malar region, chin, throat, and chest dull

spicuous patch of yellow on each side of chest and breast, the median portion of breast, together with sides and flanks, sometimes tinged with yellow; bill dark brown or brownish black in summer, pale brown in winter; iris, legs, and feet as in adult male; length (skins), 112–121 (116.9); wing, 58–66 (61.1); tail, 49–58 (54.1); exposed culmen, 8–9 (8.8); tarsus, 15–18 (17.1); middle toe, 9–11 (10.4).<sup>1</sup>

*Immature male.*<sup>2</sup>—Similar in coloration to the adult female and sometimes indistinguishable,<sup>3</sup> but usually (?) with the back, etc., more brownish olive and the yellow patch on side of breast more orange or salmon color.

*Immature female.*—Similar to the adult female but gray of head and neck more brownish, less strongly contrasted with olive of back; throat and chest (especially the latter) tinged with brownish buff; yellow on sides of breast less distinct, and that at base of secondaries almost (sometimes entirely) concealed.

*Young (both sexes), first plumage.*—Above plain grayish brown, beneath plain grayish white, deepening into pale gray on chest; no yellow on sides of breast; wings and tail as in older birds, but middle and greater wing-coverts tipped with dull white or pale yellowish, forming two bands.

Temperate North America in general, except Pacific coast district and western portions of Rocky Mountain district, within the United States; breeding northward in the Atlantic coast district to Nova Scotia, in the interior to Mackenzie (Fort Simpson, Fort Resolution, etc.), and on the Pacific coast to southern Alaska (Point Gustavus, Glacier Bay), westward to Utah (Wasatch Mountains), Idaho (Fort Sherman), eastern Washington (Okanogan County), and British Columbia (chiefly east of Cascade Mountains), southward to Mississippi, etc.; occurring casually or occasionally in California (Haywards, June 20), Oregon (John Day River, July 1), Lower California (Miraflores and La Paz, February, March), Arizona (Catalina Mountains, August 2, Tucson, spring), and other parts of extreme western United States; in winter south throughout West Indies, Mexico, and Central America to northern South America (Colombia, Ecuador, Venezuela, Trinidad, and British Guiana).

[*Motacilla*] *ruticilla* LINNÆUS, Syst. Nat., ed. 10, i, 1758, 186 (based on *The Red-Start*, *Ruticilla americana*, Catesby, Nat. Hist. Carolina, i, 67, pl. 67).

[*Muscicapa*] *ruticilla* LINNÆUS, Syst. Nat., ed. 12, i, 1766, 326.—GMELIN, Syst. Nat., i, pt. ii, 1788, 935.—LATHAM, Index Orn., ii, 1790, 473.

*Muscicapa ruticilla* BODDAERT, Tabl. Pl. Enl., 1783, 33 (ex *Gobe-mouche, d' Amerique*, Daubenton, Pl. Enl., pl. 566, figs. 1, 2).—VIEILLOT, Ois. Am. Sept., i, 1807, 66, pls. 35, 36.—WILSON, Am. Orn., i, 1808, 103, pl. 6, fig. 6; v, 1812, 119, pl. 45, fig. 2.—STEPHENS, Shaw's Gen. Zool., xi, 1817, 362.—BONAPARTE,

<sup>1</sup> Eleven specimens.

<sup>2</sup> The male is several years in acquiring the full plumage.

<sup>3</sup> Unless some specimens have been incorrectly determined as to sex.

- Journ. Ac. Nat. Sci. Phila., ii, 1824, 170; Ann. Lyc. N. Y., ii, 1826, 68.—AUDUBON, Orn. Biog., i, 1831, 202, pl. 40; v, 1839, 428; Synopsis, 1839, 44, Birds Am., oct. ed., i, 1840, 240, pl. 68.—D'ORBIGNY, in La Sagra's Hist. Nat. Cuba, Oia., 1839, 87.—DENNY, Proc. Zool. Soc. Lond., 1847, 38 (Jamaica; Cuba).—WILLIS, Ann. Rep. Smithsonian Inst. for 1858 (1859), 281 (Nova Scotia).
- Muscicapa (Sylvania) ruficilla* NUTTALL, Man. Orn. U. S. and Can., i, 1832, 291.
- Setophaga ruticilla* SWAINSON, Philos. Mag., n. s., i, 1827, 368; Zool. Journ., iii, May, 1827, 360; Isis, 1830, 1156.—SWAINSON and RICHARDSON, Fauna Bor-Am., ii, 1831, 223.—BONAPARTE, Proc. Zool. Soc. Lond., 1837, 118 (Guatemala); Geog. and Comp. List, 1838, 24.—NUTTALL, Man. Orn. U. S. and Can., 2d ed., i, 1840, 327.—GIESS, Birds Jamaica, 1847, 164.—CABANIS, in Schomburgk's Reis. Brit. Guiana, iii, 1848, 66; Journ. für Orn., 1856, 472 (Cuba); 1860, 325 (Costa Rica).—SCLATER, Proc. Zool. Soc. Lond., 1854, 111 (Quijos, Ecuador); 1855, 144 (Bogota, Colombia); 1856, 289 (Mexico), 292 (Cordova, Vera Cruz); 1859, 374 (Playa Vicente, Oaxaca); 1860, 84 (Ecuador), 292 (Esmeraldas, w. Ecuador); 1861, 72 (Jamaica); 1864, 172 (Valley of Mexico); 1876, 14 (Santa Lucia); 1889, 326 (Dominica), 395 (Santa Lucia); Cat. Am. Birds, 1862, 36 (Pennsylvania; Trinidad).—GUNDLACH, Journ. für Orn., 1855, 472 (Cuba); 1861, 326 (do.); 1872, 419 (do.); Repert. Fisico-Nat. Cuba, i, 1865, 237; Anal. Soc. Esp. Hist. Nat., vii, 1878, 187 (Porto Rico); Orn. Cuba, 1873, 70.—BRYANT, Proc. Bost. Soc. N. H., vi, 1857, 116 (Nova Scotia); vii, 1859, 111 (Bahamas); x, 1866, 250 (Porto Rico); xi, 1867, 91 (Santo Domingo). Journ. für Orn., 1866, 184 (Porto Rico).—SALLÉ, Proc. Zool. Soc. Lond., 1857, 211 (Santo Domingo).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 297; Cat. N. Am. Birds, 1859, no. 217; Review Am. Birds, 1865, 256.—SCLATER and SALVIN, Ibis, 1859, 12 (Belize, British Honduras); Proc. Zool. Soc. Lond., 1864, 347 (Lion Hill, Panama R. R.); 1868, 166 (Venezuela); 1870, 780 (Merida, Venezuela).—NEWTON (A. and E.), Ibis, 1859, 144 (St. Croix).—ALBRECHT, Journ. für Orn., 1861, 53 (Bahamas); 1862, 194 (Jamaica).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Isthmus of Panama); viii, 1864, 97 (Sombbrero); viii, 1865, 175 (David, Chiriqui); ix, 1868, 96 (Angostura and Turrialba, Costa Rica); Proc. U. S. Nat. Mus., i, 1878, 55 (Dominica), 189 (St. Vincent), 233

- 438 (Salt Lake Valley and Wasatch Mts., Utah); *Nom. N. Am. Birds*, 1880, no. 128; *Proc. U. S. Nat. Mus.*, viii, 1885, 564 (Cozumel I., Yucatan); x, 1888, 576 (Swan I., Caribbean Sea); *Orn. Illinois*, i, 1889, 177.—BOCCARD, *Proc. Zool. Soc. Lond.*, 1878, 52 (San José and Cartago, Costa Rica, Jan. to Apr.).—MEARNS, *Bull. Nutt. Orn. Club*, iii, 1878, 70 (plumage).—SALVIN and GODMAN, *Ibis*, 1879, 199 (Atanques, prov. Santa Marta, Colombia, 4,000 ft., Feb.); *Biol. Centr.-Am., Aves*, i, 1881, 178.—BREWER, *Bull. Nutt. Orn. Club*, v, 1880, 50 (Fort Walla Walla, Washington, 1 spec., Aug. 24).—EMERSON, *Ornith. and Oolog.*, vi, 1881, 43 (Haywards, California, 1 spec., June 20, 1881); *Zoe*, i, 1890, 45 (do.), Condor, iii, 1901, 145 (John Day R., Oregon, July 1, 1899).—CORY, *Birds Bahama Is.*, 1880, 75; *Bull. Nutt. Orn. Club*, vi, 1881, 151 (Haiti); *Birds Haiti and San Dom.*, 1885, 40; *Auk*, iii, 1886, 46 (West Indian references); iv, 1887, 95 (Martinique); vi, 1889, 31 (Cayman Brac); vii, 1890, 375 (Tortola and Virgin Gorda), viii, 1891, 47 (St. Eustatius), 48 (St. Croix; St. Christopher), 49 (Guadeloupe); *Birds W. I.*, 1889, 60; *Cat. W. I. Birds*, 1892, 120 (Great Bahama, Bimini, Berry Islands, New Providence, Andros, Concepcion, Long I., Green Cay, Turks I., Great Inagua, and Anguilla, Bahamas; Cuba, Isle of Pines, Grand Cayman, Jamaica, Haiti, Tortola, Virgin Gorda, and St. Croix, Greater Antilles, Sombrero, St. Eustatius, St. Christopher, Antigua, Guadeloupe, Dominica, Martinique, Santa Lucia, St. Vincent, Grenada, and Barbados, Lesser Antilles).—HAY, *Bull. Nutt. Orn. Club*, vii, 1882, 91 (Hopefield and Jackson, Mississippi, breeding).—BERLEPSCH and TACZANOWSKI, *Proc. Zool. Soc. Lond.*, 1883, 541 (Chimbo, w. Ecuador, Nov.).—BELDING, *Proc. U. S. Nat. Mus.*, vi, 1883, 350 (Miraflores and La Paz, Lower California, 2 spec., Feb., Mar. 2, 1883).—RICKNELL, *Auk*, i, 1884, 217 (song).—TRISTRAM, *Ibis*, 1884, 168 (Santo Domingo).—SHARPE, *Cat. Birds Brit. Mus.*, x, 1885, 411 (Fort Simpson, British America; Juma, Ecuador; Roraima, British Guiana, etc.).—AMERICAN ORNITHOLOGISTS' UNION, *Cheek List*, 1886, no. 687. WELLS, *Proc. U. S. Nat. Mus.*, ix, 1886, 611 (Grenada). ZELEDON, *Anul. Mus. Nac. Costa Rica*, i, 1887, 107 (San José, Tárcoles, Naranjo de Cartago and Alajuela, Costa Rica).—SCOTT, *Auk*, v, 1888, 36 (Catahna Mts., Arizona, 1 spec., Aug. 12; Tucson, Arizona, 1 spec., spring).—CHERRIE, *Auk*, vii, 1890, 337 (San José, Costa Rica, Aug. 13 to Mar. 6); *Contr. Orn. San Dom.*, 1896, 12. RICHMOND, *Proc. U. S. Nat. Mus.*, xvi, 1893, 485 (Rio Escondido, Nicaragua, winter, after Sept. 20.). NEHRING, *Our Native Birds*, etc., i, 1894, 275, pl. 14, fig. 5.—CHAPMAN, *Bull. Am. Mus. N. H.*, vi, 1894, 24 (Trinidad). DAWSON, *Auk*, xiv, 1897, 180 (Okanogan Co., Washington, breeding). MERRILL, *Auk*, xv, 1898, 19 (Fort Sherman, n. w. Idaho, summer resid.).—BIRTWELL, *Auk*, xvi, 1899, 184 (nesting in Vireo's nest).—BROOKS, *Auk*, xvii, 1900, 107 (British Columbia, regularly e. of Cascade Mts., occasionally on w. side).—BANDS, *Proc. Biol. Soc. Wash.*, xii, 1898, 144 (Santa Marta, Colombia); *Proc. New Engl. Zool. Club*, iii, 1902, 61 (Boquete, Chiriqui, Jan. 24).
- S[etophaga] ruticilla* CABANIS, *Mus. Hein.*, i, 1850, 18.—NEWTON (A. and E.), *Handb. Jamaica*, 1881, 106.—COLES, *Key N. Am. Birds*, 2d ed., 1884, 316. RIDGWAY, *Nom. N. Am. Birds*, 1887, 529.
- [*Setophaga*] *ruticilla* BONAPARTE, *Connsp. Av.*, i, 1850, 312.—COLES, *Key N. Am. Birds*, 1872, 110.—ECLATER and SALVIN, *Nom. Av. Neotr.*, 1873, 10.
- [*Molurus*] *flavicauda* GMELIN, *Syst. Nat.*, i, pt. ii, 1788, 907 (based on *Yellow-tailed Flycatcher*, *Muscivora cauda lutea*, Edwards, *Gleanings Nat. Hist.*, 101, pl. 257, up. fig.).
- S[ylva] flavicauda* SUCKOW, *Anfangs. Naturg. Thiere, Vögel*, ii, 1801, 1116.

- (?) *Sylvia russeicauda* Vieillot, Ois. Am. Sept., ii, 1807, 17, pl. 71 (Pennsylvania; coll. Vieillot); Nouv. Dict. d'Hist. Nat., xi, 1817, 266.—STEPHENS, Shaw's Gen. Zool., x, 1817, 675.
- (?) *Sylvia russeicauda* Vieillot, Enc. Méth., ii, 1823, 476.
- (?) [*Setophaga*] *russeicauda* Gray, Hand-list, i, 1869, 243, no. 3517.
- Motacilla tricolora* Müller Syst. Nat. Suppl., 1776, 175 (based on *Figuier noir et jaune de Cayenne* Daubenton, Pl. Enl., 391, fig. 2; adult male).
- [*Motacilla*] *multicolor* Gmelin, Syst. Nat., i, pt. ii, 1788, 972 (Cayenne; based on *Figuier noir* Buffon, Hist. Nat. Ois., v., 314; *Figuier noir et jaune* Daubenton, Pl. Enl., pl. 391, fig. 2; *Rufous and black Warbler* Latham, Synop. Birds, ii, pt. 2, 493).

**SETOPHAGA PICTA PICTA (Swainson).**

**PAINTED REDSTART.**

*Adults (sexes alike).*<sup>1</sup>—Head, neck, upper chest, sides, back, scapulars, lesser wing-coverts, rump, and upper tail-coverts uniform deep black, with a faint bluish gloss; wings and tail black, the former relieved by a large white patch involving the middle and greater coverts and edges of innermost secondaries (tertials), the latter with three outermost rectrices extensively white terminally, this white occupying much the greater part of the outermost rectrix; lower chest, breast, and abdomen rich vermilion or poppy red, rarely more orange-red; under tail-coverts black or blackish, broadly tipped with white; axillars and under wing-coverts mostly white; bill, legs, and feet, black; iris brown.

*Young, first plumage.*—Above plain sooty black, the wings and tail as in adults, but the white wing-patch tinged with buff; beneath sooty grayish, passing into dull whitish on center of abdomen, the breast spotted or broadly streaked with sooty blackish.

- Proc. Zool. Soc. Lond., 1855, 66; 1856, 292 (near City of Mexico); 1858, 299, (La Parada, Oaxaca); 1859, 374 (Cinco Señores, Oaxaca).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (alpine reg. Orizaba).—RIDGWAY, Am. Nat., vi, 1872, 436 (Tucson, Arizona); Nom. N. Am. Birds, 1881, no. 129.—COUES, Check List, 1873, no. 105; 2d ed., 1882, no. 151; Birds Col. Val., 1878, 335.—HENSHAW, Rep. Orn. Spec. Wheeler's Surv., 1873 (1874), 104 (Apache and 30 m. s. of Apache, Arizona, Aug. 29 to Sept. 11; habits); Zool. Exp. W. 100th Merid., 1875, 209 (Rock Cañon, Mt. Graham, near Camp Crittenden, etc., Arizona; habits; descr. young).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 322, part; ii, 1874, pl. 46, fig. 7; pl. 56, fig. 3; iii, 1874, 507 (Tucson, Arizona).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 270 (Sierra Madre, near Mazatlan; habits).—SALVIN, Ibis, 1878, 306, part (monogr.).—BREWSTER, Bull. Nutt. Orn. Club, vi, 1880, 73 (Chiricahua Mts., Arizona, Apr.); vii, 1882, 140 (habits; descr. nest and eggs; etc.), 249.—BRYANT (W. E.), Bull. Nutt. Orn. Club, vi, 1881, 176 (Santa Rita Mts., Arizona, breeding; descr. nest and eggs).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 179, part (Mexican localities and references).—SCOTT, Auk, ii, 1885, 353 (Pima Co., Arizona); v, 1888, 36 (Santa Catalina Mts., Arizona, above 4,000 ft.).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 415 (Ciudad Durango, etc.; excl. syn. part).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 688.—MEARNS, Auk, vii, 1890, 261 (Mogollon Mts., Arizona).—ANTHONY, Auk, ix, 1892, 367 (s. w. part Grant Co., New Mexico).—ALLEN, Bull. Am. Mus. N. H., v, 1893, 40 (Guanopa and Huerachi, n. w. Chihuahua, Dec., Feb.).—NEHRLING, Our Native Birds, etc., i, 1893, 279.—BRENINGER, Condor, iii, 1901, 147 (Huachuca Mts., Arizona; descr. nest and eggs).
- S[etophaga] picta* GRAY, Gen. Birds, i, 1846, 265.—COUES, Key N. Am. Birds, 2d ed., 1884, 315.—RIDGWAY, Man. N. Am. Birds, 1887, 529.
- [*Setophaga*] *picta* BONAPARTE, Consp. Av., i, 1850, 312 (Zacatecas).—GRAY, Hand-list, i, 1869, 243, no. 3515.—COUES, Key N. Am. Birds, 1872, 110.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.
- Muscicapa leucomus* GIRAUD, Sixteen Species Texan Birds, 1841, fol. 23, pl. 6, fig. 1 ("Texas"; type now in coll. U. S. Nat. Mus.).

### SETOPHAGA PICTA GUATEMALÆ Sharpe.

#### GUATEMALAN PAINTED REDSTART.

Similar to *S. p. picta*, but with third rectrix entirely black or else with very little white, and white edgings to innermost secondaries (tertiaries) much less distinct, often obsolete; average size slightly less.

*Adult male*.—Length (skins), 120–129 (126); wing, 66–71 (68.5); tail, 60–61.5 (60.9); exposed culmen, 8.5; tarsus, 17–17.5 (17.2).<sup>1</sup>

*Adult female*.—Length (skins), 132–133 (132.5); wing, 67–68.5 (67.8); tail, 62–65 (63); exposed culmen, 8–8.5 (8.2); tarsus, 17.<sup>2</sup>

Highlands of Guatemala (Volcan de Fuego, ridge near Chancol, Hacienda Chancol, San Gerónimo, Santa Barbara, Chilasco, Tactic, Canillá-Guitché, Toyabaj-Guitché, etc.), Chiapas (Gineta Mountains, San Cristobal, etc.) and northern Honduras (Comayagua).

<sup>1</sup> Four specimens.

<sup>2</sup> Three specimens.

*Setophaga picta* (not of Swainson) SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1859, 12 (Guatemala).—TAYLOR, Ibis, 1860, 110 (Comayagua, Honduras).—SCLATER, Cat. Am. Birds, 1862, 36 (Guatemala).—BAIRD, Review Am. Birds, 1865, 256, part (Volcan de Fuego, Guatemala).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 322, part (Guatemala).—LAWRENCE, Bull. U. S. Nat. Mus. no. 4, 1876, 16 (Gineta Mts., Chiapas).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 179, part (Volcan de Fuego, ridge near Chancol, San Jerónimo, Santa Barbara, Chilasco, and Tactic, Guatemala, Comayagua, Honduras).

[*Setophaga*] *picta* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

[*Setophaga picta*.] Subsp.  $\alpha$ . *Setophaga guatemalæ* SHARPE, Cat. Birds Brit. Mus., x, 1885, 417 (Guatemala, no type locality indicated; coll. Brit. Mus.)

*Setophaga* *picta guatemalæ* RIDGWAY, Man. N. Am. Birds, 1887, 530.

*Setophaga picta guatemalæ* NELSON, Auk, xv, 1898, 159 (interior of Chiapas).

#### Genus MYIOBORUS Baird.

*Myioborus* BAIRD, Review Am. Birds, April, 1865, 237, 257. (Type, *Setophaga verticilis* Swainson.)

Similar to *Setophaga*, but bill more depressed, rictal bristles much longer (equal to or longer than bill); wing shorter and much more rounded (ninth primary shorter than fourth, sometimes shorter than third); tarsus longer (very much more than one-fourth to more than one-third as long as wing), and style of coloration very different (crown with a patch of chestnut, or else forehead yellow and under parts yellow; no white, orange, nor yellow on wing; back, etc., slate-gray or slate color, rarely olive or brownish).

Bill about half as long as head, or less, very much depressed, triangular or broadly wedge-shaped in vertical profile; culmen sharply ridged, straight to near tip, where strongly decurved; commissure straight with subterminal patch of maxillary tomium minute but



low; no lighter markings on wing, but lateral rectrices more or less extensively white terminally; sexes alike.

*Nidification*.—Unknown.

*Range*.—The whole of continental tropical America. (About twelve species.)

This is a very natural and homogeneous group, in this respect strongly contrasting with *Basileuterus*. The eleven species examined<sup>1</sup> agree very closely in structural details, the slight departures from the normal type consisting almost wholly in immaterial differences in relative length of the wings and tail. The latter is usually a little shorter than the former; in *M. miniata flammea* and *M. albifrons* the wing and tail are of the same length, while in *M. verticalis* (a close ally of the former, with identical color-pattern) the tail is decidedly shorter than the wing, the other species ranging between these extremes. The wing-formula is remarkably uniform, and the variations in the pattern of coloration are confined almost wholly to the head.

All the Central American and Mexican forms have a large patch of chestnut or chestnut-rufous on the crown, the forehead and sides of the crown being black.

#### KEY TO THE SPECIES AND SUBSPECIES OF MYIOBORUS.

- a. Throat black or blackish slate; sides of head slate color or slate-gray.
  - b. Under parts of body red or reddish orange.
    - c. Third rectrix with a large terminal spot of white; red of under parts usually bright vermilion or pinkish vermilion. (Highlands of Mexico.)  
*Myioborus miniatus miniatus*, adults (p. 731)
    - cc. Third rectrix entirely black; red of under parts usually orange red or flame scarlet. (Highlands of Guatemala and Chiapas.)  
*Myioborus miniatus flammeus*, adults (p. 733)
  - bb. Under parts of body orange-yellow. (Highlands of Costa Rica and Chiriqui.)  
*Myioborus aurantiacus*, adults (p. 733)
- aa. Throat and sides of head lemon yellow, like under parts of body; a dusky or slaty band across chest. (Highlands of Costa Rica and Chiriqui.)  
*Myioborus torquatus*, adults (p. 735)

#### MYIOBORUS MINIATUS MINIATUS (Swainson).

##### RED-BELLIED REDSTART.

*Adult male*.—Forehead, anterior portion of crown, superciliary region, lores, suborbital and malar regions, chin, and throat uniform black; posterior portion of crown and occiput chestnut, the feathers elongated; postocular region, posterior portion of auricular region, hindneck, sides of neck, back, scapulars, lesser wing-coverts, and rump uniform slate color; wings darker with slate colored or slate-gray edgings; upper tail-coverts and tail black, the three outermost rectrices

<sup>1</sup> Of those given in vol. x of the Catalogue of the Birds in the British Museum (pp. 410–430) all have been examined in the present connection except *M. brunneiceps* and *M. castaneicapilla*.

broadly tipped with white;<sup>1</sup> under parts of body vermillion red, the sides and flanks partly slate-gray; under tail-coverts blackish slate or slate-black, broadly tipped with white; axillars and under wing-coverts white; bill, legs, and feet black or brownish black; iris brown; length (skins), 130-134 (131); wing, 62.5-65 (63.5); tail, 69-72 (70.4); exposed culmen, 8-9 (8.4); tarsus, 18-19 (18.2).<sup>2</sup>

*Adult female*.—Similar to the adult male, but forehead and anterior portion of crown slate color, each feather with a central spot of black; throat, etc., duller black or blackish slate; red of under parts slightly paler, more pinkish; length (skins), 126-134 (133); wing, 61-65 (62.9); tail, 68-72 (70.2); exposed culmen, 7.5-8.5 (8); tarsus, 18.5-19 (18.9).<sup>3</sup>

*Young, first plumage*.—Above, including entire pileum, uniform sooty slate-color; under parts similar but paler, the median portion of chest, breast, and abdomen dull chestnut, fading into pale cinnamon or cinnamon-buff on center of abdomen; wings and tail as in adults, but middle and greater wing-coverts indistinctly tipped with brownish.

Highlands of Mexico, in States of Oaxaca, Vera Cruz, Mexico, Puebla, Zacatecas, Sinaloa, Chihuahua (Jesus Maria), etc.

*Setophaga miniata* SWAINSON, Philos. Mag., new ser., i, 1827, 368 (Valladolid, Mexico); Isis, 1834, 784; Anim. in Menag., 1838, 293.—SCLATER, Proc. Zool. Soc. Lond., 1856, 292 (Corlova, Vera Cruz); 1858, 299 (La Parada, Oaxaca), 1859, 363 (Jalapa, Vera Cruz), 374 (Cinco Señores and Totontepec, Oaxaca), 1864, 173 (Valley of Mexico); Cat. Am. Birds, 1862, 37 (Mexico).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 299, ed. 1860 (Birds N. Am.), pl. 77, fig. 1, Cat. N. Am. Birds, 1859, no. 219; Review Am. Birds, 1865, 259 (n. e. Mexico; Jalapa; Orizaba).—SCHUCHMART, Mem. Bost. Soc. N. H., i, 1869, 546 (temperate

- Muscicapa vulnerata* WAGLER, Isis, 1831, 529 (cites *Muscicapa derhami* Giraud and *Setophaga miniata* Swainson).—KAUP, Proc. Zool. Soc. Lond., 1851, 50.
- S[etophaga] vulnerata* GRAY, Gen. Birds, i, 1846, 265.—CABANIS, Mus. Hein., i, 1850, 18 (Mexico).
- [*Setophaga*] *vulnerata* BONAPARTE, Consp. Av., i, 1850, 313 (Zacatecas).
- Setophaga vulnerata* BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 329 ("Texas").—SCLATER, Proc. Zool. Soc. Lond., 1855, 65.
- Setophaga castanea* LESSON, Rev. Zool., ii, Jan., 1839 (pub. 1840), 42 (Mexico).
- Muscicapa derhami* GIRAUD, Sixteen Species Texan Birds, 1841, folio 13, pl. 3, fig. 2, ("Texas;" type now in coll. U. S. Nat. Mus.).

### MYIOBORUS MINIATUS FLAMMEUS (Kaup).

#### KAUP'S REDSTART.

Similar to *M. m. miniatus*, but with much less white on the tail, the third rectrix being either entirely black or with only a minute white spot at tip; red of under parts usually of a more orange hue (nearly flame scarlet), varying, rarely, to light reddish orange or saturn red.

*Adult male*.—Length (skins), 126; wing, 63; tail, 64.5–65 (64.7); exposed culmen, 8.5–9 (8.7); tarsus, 17.5–19 (18.2).<sup>1</sup>

*Adult female*.—Length (skins), 120–130 (125); wing, 59–63 (60.3); tail, 60–65 (63); exposed culmen, 8.5–9 (8.8); tarsus, 18.<sup>2</sup>

Highlands of Guatemala (Volcan de Fuego, Volcan de Agua, Coban, Choctum, Dueñas, etc.) and Chiapas (Tumbalá, Yajalon, Chicharro, Tenejapa, etc.).

*Setophaga flammea* KAUP, Proc. Zool. Soc. Lond., 1851, 50 (Guatemala; coll. Derby Mus.); 1855, 77 (crit. nomencl.).—SCLATER and SALVIN, Ibis, 1859, 12 (Guatemala).—SCLATER, Cat. Am. Birds, 1862, 37 (Guatemala).—BAIRD, Review Am. Birds, 1865, 259, part (Coban, Guatemala).

[*Setophaga miniata*.] Subsp.  $\alpha$ . *Setophaga flammea* SHARPE, Cat. Birds Brit. Mus., x, 1885, 419 (Volcan de Fuego, Volcan de Agua, Coban, Choctum, and Dueñas, Guatemala).

*S[etophaga] miniata flammea* RIDGWAY, Man. N. Am. Birds, 1887, 530.

*Setophaga miniata flammea* NELSON, Auk, xv, 1898, 159 (Chiapas).

*Setophaga intermedia* HARTLAUB, Rev. et Mag. Zool., 1852, 5 (Guatemala; coll. Bremen Mus.).

*Setophaga miniata* (not of Swainson) BOUCARD, Liste Ois. Guat., 1878, 30.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 181, part (Guatemalan references and localities).

[*Setophaga*] *miniata* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part (Guatemala).

### MYIOBORUS AURANTIACUS (Baird).

#### YELLOW-BELLIED REDSTART.

Similar to *M. m. miniatus*, but with under parts of body saffron or cadmium yellow instead of vermilion red.

*Adults (sexes alike)*.—Forehead, sides of crown, chin, and throat

<sup>1</sup> Two specimens.

<sup>2</sup> Three specimens.

black; crown (except laterally) and occiput chestnut, the feathers elongated; rest of head and neck (including lores and superciliary region), together with back, scapulars, lesser wing-coverts, and rump uniform bluish slate color; wings blackish with slate colored edgings; upper tail-coverts black, usually margined with slaty; tail black, the three outermost rectrices extensively white at tip; under parts of body saffron or cadmium yellow, usually deeper and more brownish yellow on chest; under tail-coverts white, slate color, or slate-gray basally; axillars and under wing-coverts white; bill, black; iris, brown; legs and feet blackish.

*Young in first plumage.*—Above, including whole pileum, uniform sooty slate; beneath similar but paler, the chest strongly tinged with rusty or cinnamon; wings and tail essentially as in adults.

*Adult male.*—Length (skins), 118–128 (124); wing, 58–66 (63.4); tail, 55.5–62 (59.5); exposed culmen, 9–10 (9.4); tarsus, 18–19.5 (18.7).<sup>2</sup>

*Adult female.*—Length (skins), 120–127 (124.2); wing, 58–63 (61); tail, 56–62 (58.8); exposed culmen, 8–10 (9.2); tarsus, 18–19 (18.6).<sup>3</sup>

Highlands of Costa Rica (Dota, Grecia, Barranca, Cartago, Naranjo, Turrialba, Tucurrique, Candelaria, etc.) and Chiriqui (Volcan de Chiriqui, Boquete, Calovevora, etc.).

*Setophaga flammea* (not of Kaup) CABANIS, Journ. für Orn., 1861, 85 (Costa Rica).—BAIRD, Review Am. Birds, 1865, 259, part (ref. to Cabania, loc. cit. and locality "Costa Rica").

[*Setophaga minata*.] Subsp. n. *Setophaga flammea* SHARPE, Cat. Birds Brit. Mus., x, 1885, 419, part (loc. "Costa Rica").

*Setophaga aurantiaca* BAIRD, Review Am. Birds, May, 1865, 261 (Dota, Costa Rica: coll. U. S. Nat. Mus.) —LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 96 (Grecia, Barro Colorado Island, Costa Rica). —SAYRE, Ibis, 1892, 13 (Costa Rica: coll. U. S. Nat. Mus.).

## MYIOBORUS TORQUATUS (Baird).

## COLLARED REDSTART.

*Adults (sexes alike).*—Forehead (except extreme anterior portion) and sides of crown and occiput black; crown (except laterally) and occiput rufous-chestnut, the feathers elongated; nape (mostly concealed by the rufous-chestnut occipital feathers) blackish; rest of upper parts plain slate color, sometimes faintly tinged with olive, the back rarely indistinctly clouded with dusky; wings blackish slate with indistinct slaty edgings; tail black, the two outermost rectrices extensively white terminally, the third sometimes with a small amount of white at tip; whole side of head, including superciliary, loreal,<sup>1</sup> suborbital, auricular, and malar regions, together with under parts (except under tail-coverts) lemon yellow, interrupted by a band of slate color or blackish slate across chest; under tail-coverts pale yellow or yellowish white; under wing-coverts and axillars mostly yellowish-white; bill black or dusky brown; iris brown; legs and feet blackish.

*Adult male.*—Length (skins), 124–127 (125.4); wing, 65–68 (66.5); tail, 60–62.5 (61.2); exposed culmen, 19–21 (19.8).<sup>2</sup>

*Adult female.*—Length (skins), 124–125 (124.7); wing, 63–66 (64.5); tail, 57–60 (58.7); exposed culmen, 9–10 (9.4); tarsus, 19–20.5 (19.6).<sup>3</sup>

Highlands of Costa Rica (San José, La Palma, Candelaria Mountains, Volcan de Irazú, etc.) and Chiriqui (Volcan de Chiriqui, Cordillera del Tole, Boquete, etc.).

*Setophaga torquata* BAIRD, Review Am. Birds, May, 1865, 261 (San José, Costa Rica; coll. U. S. Nat. Mus.).—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Cordillera de Tole, Veragua); Ibis, 1878, 319 (Volcan de Chiriqui; monogr.).—LAWRENCE, Am. Lyc. N. Y., ix, 1868, 96 (San José and La Palma, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 294 (Candelaria Mts., Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 53 (Volcan de Irazú, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 183, pl. 10, fig. 2.—NUTTING, Proc. U. S. Nat. Mus., v, 1882, 495 (Volcan de Irazú).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 424 (Irazú district and La Palma, Costa Rica, etc.).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 107 (Volcan de Irazú).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 61 (Volcan de Chiriqui, 4,000 to 7,500 ft., and Boquete, Chiriqui).

[*Setophaga*] *torquata* GRAY, Hand-list, i, 1869, 243, no. 3526.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 11.

## Genus EUTHLYPIS Cabanis.

*Euthlypis* CABANIS, Mus. Hein., i, 1850, 18. (Type, *E. lachrymosa* Cabanis.)

Similar to *Myioborus*, but bill much longer (nearly as long as head) and much less depressed, relatively narrower and deeper; rictal bristles shorter, not reaching more than halfway to tip of bill.

<sup>1</sup> The yellow of the lores crosses the extreme anterior portion of the forehead.

<sup>2</sup> Five specimens.

<sup>3</sup> Four specimens.

Bill nearly as long as head, wedge-shaped in vertical profile, slightly depressed, its depth at anterior end of nostrils about equal to its width at same point; culmen sharply ridged, straight or very faintly convex for most of its length, the terminal portion strongly decurved; gonys slightly convex basally, straight, or nearly so, terminally; maxillary tomium faintly convex anterior to middle portion, its subterminal notch distinct. Nostril longitudinal, narrow, overhung by a broad membranous operculum. Rictal bristles well developed, but not reaching to much beyond nostrils when directed forward. Wing rather long, rounded (seventh and sixth primaries longest, eighth slightly shorter than sixth, ninth shorter than fifth); wing-tip about equal to exposed culmen, slightly more than half as long as tarsus. Tail nearly as long as wing, much rounded, the rectrices rather narrow, with tips subacuminate. Tarsus a little less than one-third as long as wing, its scutella rather distinct; middle toe, with claw, much shorter than tarsus; basal phalanx of middle toe united for most of its length to outer toe, for about half its length to middle toe.

*Coloration*.—Forehead and crown black, the latter with a central spot of yellow; rest of upper parts brownish slate color, the tail blackish, with short white tips to rectrices (except middle pair); under parts yellow, the chest and sides light orange-rufous or tawny; supra-loral spot and part of eyelids white; sexes alike.

*Vidification*.—Unknown.

*Range*.—Highlands of southern Mexico and Central America. (Monotypic.)

If this genus is not to be recognized the type species must be referred to *Basilentornis* and not to *Myioborus* ("Sclerophaga," part).



white, tinged with yellow, the feathers slate-gray beneath the surface; axillars and under wing-coverts mostly gray, sometimes tinged with olive; bill black; legs and feet light brown (in dried skins); length (skins), 141–152 (146); wing, 75.5–80 (77.4); tail, 70–73 (71.6); exposed culmen, 12–13 (12.3); tarsus, 23–24.5 (23.9); middle toe, 13–14 (13.5).<sup>1</sup>

*Adult female*.—Similar to the adult male in coloration, and not always distinguishable, but averaging rather lighter slate color above, with the back more strongly tinged with olive; lores and anterior portion of suborbital and malar regions sometimes dull slate-gray, instead of black; yellow crown-patch usually (?) rather smaller, with the feathers, especially the more posterior ones, tipped with olive; wing and tail shorter; length (skins), 140–152 (146.4); wing, 67–76 (71); tail, 64–69 (66.1); exposed culmen, 11.5–13 (12.4); tarsus, 22.5–24 (23.3); middle toe, 12.5–13.5 (13.1).<sup>2</sup>

Southeastern Mexico, in States of Vera Cruz (Cordova; Jalapa; Mirador; Motzorongo), Puebla (Acatlan), Oaxaca (Pluma; Tehuantepec; Santa Efigenia), and Chiapas (Tuxtla); highlands of Guatemala (Volcan de Agua; Volcan de Fuego; Alotenango; Savana Grande; Barranca Honda), and southward to Nicaragua (Ometepe).

*E[uthlypis] lachrymosa* CABANIS, Mus. Hein., i, 1850, 19, footnote (Lagunas, Mexico; coll. Berlin Mus.; ex. *Sylvia lachrymosa* Lichtenstein, manuscript).  
*Euthlypis lachrymosa* SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Cordova, Vera Cruz); 1859, 363 (Jalapa, Vera Cruz); Cat. Am. Birds, 1862, 36 (Jalapa).—SALVIN and SCLATER, Ibis, 1860, 274 (Alotenango, Guatemala).—SUMICHRIST, Mem. Bost. Soc. N. H., i, 1869, 546 (temp. reg. Vera Cruz; habits).—NUTTING, Proc. U. S. Nat. Mus., vi, 1883, 392 (Ometepe, Nicaragua).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 138 (Acatlan, Puebla).  
[*Basileuterus*] *lachrymosa* BONAPARTE, Consp. Av., i, 1850, 314 (Lagunas).  
*Setophaga lachrymosa* BAIRD, Review Am. Birds, 1865, 263 (Mexico; Savana Grande, Guatemala).—SALVIN, Ibis, 1878, 320, part (monogr.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 184, part pl. 11, fig. 2.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 430 (Jalapa and Cordova, Vera Cruz; Santa Efigenia, Oaxaca; Volcan de Agua, Barranca-Hondo, and Alotenango, Guatemala).  
[*Setophaga*] *lachrymosa* GRAY, Hand-list, i, 1869, 244, no. 3539.—SCLATER and SALVIN, Nom. Av. Neotr., 1873, 11.

<sup>1</sup> Four specimens.  
<sup>2</sup> Seven specimens.  
Specimens from different localities average, respectively, as follows:

Locality.	Wing.	Tail.	Ex- posed culmen.	Tarsus.	Middle toe.
MALES.					
Three adult males from Vera Cruz and Oaxaca.....	77.8	72.1	12.3	24.2	13.7
One adult male from Nicaragua (Ometepe).....	77.4	71.6	12.3	23.4	13.5
FEMALES.					
Three adult females from Vera Cruz and Oaxaca.....	70.7	65.3	12	23.2	13
One adult female from Chiapas (Tuxtla).....	71	67	12	23	12.5
Three adult females from Guatemala.....	71.3	66.7	12.8	23.5	13.3

EUTHLYPIS LACHRYMOSA TEPHRA Ridgway.<sup>1</sup>

## WESTERN FAN-TAILED WARBLER.

Similar to *E. l. lachrymosa*, but sides of head much lighter slate-gray, the lores and anterior portion of suborbital and malar regions never blackish; upper parts lighter slate color, the back, etc., much more strongly tinged with olive; white supraloral spot averaging larger; wing and tail averaging shorter.

*Adult male*.—Length (skins), 139–160 (144.9); wing, 69–75 (73.1); tail, 65–71 (67.9); exposed culmen, 12–13 (12.4); tarsus, 23–24 (23.1); middle toe, 13.5–14 (13.6).<sup>2</sup>

*Adult female*.—Length (skins), 142; wing, 68; tail, 66.5; exposed culmen, 12.5; tarsus, 23; middle-toe, 13.<sup>3</sup>

Western Mexico, in States of Chihuahua (Hacienda de San Rafael), Sinaloa (Sierra Madre, near Mazatlan), and Jalisco (Barranca Ibarra; San Sebastian).

*Euthlypis lachrymosa* (not of Cabanis) LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 270 (Mazatlan, Sinaloa; habits).—JOUY, Proc. U. S. Nat. Mus., xvi, 1893, 777 (Barranca Ibarra, Jalisco; habits).

*Setophaga lachrymosa* SALVIN, Ibis, 1878, 320, part (Mazatlan).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 184, part (Mazatlan).

## Genus BASILEUTERUS Cabanis.

*Basileuterus*<sup>4</sup> CABANIS, in Wiegmann's Archiv. für Naturg., iii, pt. i, 1847, 316. (Type, *Sylvia vermirora* Vieillot, = *Setophaga aureocapilla* Swainson.)

*Idioes* BAIRD, Review Am. Birds, April, 1865, 237, 247. (Type, *Setophaga rufifrons* Swainson.)

Similar to *Wilsonia*, but wing relatively shorter and much more rounded (ninth primary shorter than fourth instead of longer than



rump, upper tail-coverts, and basal half of tail buff. Similar also to *Euthlypis*, but tarsus relatively longer (at least one-third as long as wing), ninth primary shorter than fourth (instead of longer), and without white on rectrices.

Bill decidedly shorter than head, sometimes scarcely more than half as long, but very variable as to relative length and width and extent of depression (sometimes the width at nostrils equal to, usually decidedly less than, length of exposed culmen); culmen rather distinctly ridged, nearly straight for basal third or more, becoming gradually more decidedly curved terminally, the tip of the maxilla moderately produced, but scarcely uncinatate; gonys very faintly convex; maxillary tomium nearly straight to near tip, where faintly concave, with distinct subterminal notch. Nostril longitudinal, nearly linear, in lower anterior portion of nasal fossæ, overhung by a broad membranous operculum. Rictal bristles very distinct, but variable as to development, usually extending but little if any beyond nostrils (when directed forward), sometimes reaching considerably beyond. Wing rather short to rather long, more or less rounded (eighth to fifth, seventh, seventh and sixth, or sixth and fifth primaries longest, ninth shorter than fifth, usually shorter than second, sometimes shorter than first); wing-tip variable, always shorter than middle toe with claw, sometimes much shorter than middle toe without claw. Tail more or less shorter than wing, or at least not longer (except in *B. rufifrons*), usually equal to or longer than distance from bend of wing to tips of secondaries, more or less rounded (sometimes almost even), the rectrices usually rather narrow, with tips sub-acuminate. Tarsus one-third to much more than one-third as long as wing, rather stout, its scutella fairly distinct; middle toe, with claw, much shorter than tarsus, its basal phalanx united for more than half its length to outer toe, for about half (more or less) its length to inner toe.

*Coloration*.—No white on rectrices; wings unicolored; pileum three-striped (two black lateral stripes, inclosing a median one of chestnut, rufous, rufous-orange, yellowish, or grayish), or else wholly chestnut-rufous or (if unicolored and concolor with the back) the lower rump, upper tail-coverts, and basal half of tail buff or ochraceous-buff; upper parts (except as described) plain olive, olive-green, or grayish; under parts yellowish (with or without whitish or grayish throat), yellow anteriorly and whitish posteriorly, or whitish or buffy medially and grayish or olive laterally.

*Nidification*.—Unknown.

*Range*.—The whole of continental Tropical America. (Numerous species, mostly South American.)

The thirty-odd species which compose this group as characterized above (and as usually recognized) vary so much in the details of external structure that were it not for certain species of intermediate

structure the group could easily be subdivided into several genera; but the existence of these intermediate forms seems to forbid such subdivision.

*B. culicivorus* is the only species in which the eighth primary is equal, or nearly equal, to the longest, and (except *B. leucoblepharus*) the only one in which the ninth primary is equal to or longer than the third; yet this form is obviously very closely related to *B. aurocapillus* (the type of the genus). *B. rufifrons* is the only species which has the tail longer than the wing, yet there can be no question of the close relationship between *B. rufifrons* and *B. belli*, the latter having the tail shorter than the wing. *B. melanogenys* has the bill relatively much smaller and narrower than other species, being quite similar, in that respect, to *Ergaticus*; but in other characters, including coloration, it is a typical *Basileuterus*. The opposite development of the bill is seen in *B. semicervinus* and related (probably conspecific) forms, *B. uropygialis*, *B. veraguensis*, and *B. leucopygius*; in these the bill is shaped very much as in the genus *Myioborus*, being almost equally broad at the base, but is less depressed and relatively much larger. In this group, too, the coloration is peculiar, the pileum being unicolorous and concolor with the back, while the lower rump, upper tail-coverts and basal half of the tail are buffy or ochraceous in abrupt and strong contrast with the general uniform dark olive or olive-brown of the upper parts. *B. stragulatus*, however (of which, unfortunately, I have not been able to examine a perfect specimen), seems to agree in large and broad bill and other structural characters with *B. semicervinus*, while having the three-striped pileum and dark-colored rump, thus representing a link between *B. semicervinus* and *B. belli*.

KEY TO THE SPECIES AND SUBSPECIES OF *BASILEUTERUS*.

- a. Rump and upper tail-coverts olive-green or olive, concolor with back; tail entirely dark colored.
- b. Pileum conspicuously different in color from back; no wing-bands. (Adults.)
- c. Auricular region chestnut, like pileum.
- d. Superciliary stripe bright yellow. (*Basileuterus belli*.)
  - e. Darker, especially the chestnut on sides of head; tarsus shorter (20–22 in male).
  - f. Smaller (adult male averaging wing 57.7, tail 54.7, exposed culmen 9; adult female, wing 56.5, tail 52.2, exposed culmen 9.2); olive-green of upper parts lighter; lores mostly black. (Southeastern Mexico, in States of Vera Cruz, Puebla, Mexico, and Oaxaca.)  
*Basileuterus belli belli*, adults (p. 743)
  - ff. Larger (adult male averaging wing 64.5, tail 61, exposed culmen 10.2; adult female, wing 58, tail 55.5, exposed culmen 10); olive-green of upper parts darker; lores mostly chestnut. (Highlands of Guatemala and Chiapas).....*Basileuterus belli scitulus*, adults (p. 744)
  - ee. Lighter, especially the chestnut on sides of head; tarsus longer (23–24 in male). (Southwestern Mexico, in States of Guerrero and Jalisco.  
*Basileuterus belli clarus*, adults (p. 745)
- dd. Superciliary stripe white. (*Basileuterus rufifrons*.)
  - e. Under parts with only the anterior half yellow, the abdomen being white; sides and flanks grayish and buffy.
  - f. Back olive-green, abruptly contrasted with gray of hindneck; white of posterior under parts usually more or less tinged with yellow; tail relatively shorter (averaging 55.2 in male, 54.4 in female) and bill larger (exposed culmen averaging 10.6). (Southeastern Mexico, in States of Vera Cruz, Puebla, Oaxaca, and Chiapas; Guatemala.)  
*Basileuterus rufifrons rufifrons*, adults (p. 745)
  - ff. Back grayish olive, scarcely different from dull gray of hindneck; white of posterior under parts pure, untinged with yellow; tail relatively longer (averaging more than 57 in male, 56 or more in female) and bill smaller (exposed culmen averaging less than 10).
  - g. Back grayer; tail shorter (averaging less than 58 in male); adult male averaging wing 52.8, tail 57.2, exposed culmen 8.9, tarsus 20.8. (Eastern border of Mexican plateau, in States of Nuevo Leon, San Luis Potosi, and northern Vera Cruz.)  
*Basileuterus rufifrons jouyi*, adults (p. 746)
  - gg. Back browner; tail longer (averaging more than 58 in male, more than 56 in female); bill smaller (exposed culmen averaging 8.9 in male).
  - h. Tail shorter (averaging 58.8 in male, 56.2 in female); pileum almost wholly rufous. (Western and central Mexico, in States of Sinaloa, Jalisco, Michoacan, Guerrero, Oaxaca, Puebla, Hidalgo, and Guanajuato.)  
*Basileuterus rufifrons dugesi*, adults (p. 747)
  - hh. Tail longer (averaging 59.5 in male, 60.1 in female); pileum brownish gray posteriorly (sometimes medially also). (Northwestern Mexico, in States of Sonora and Chihuahua.)  
*Basileuterus rufifrons caudatus*, adults (p. 748)
  - ee. Under parts mostly (sometimes entirely) yellow, the sides and flanks olive-green.

- f.* Auricular region with only the upper half chestnut, the lower half whitish.
- g.* Hindneck and sides of neck gray; posterior under parts sometimes partly whitish. (Southern Vera Cruz to Guatemala.)  
*Basileuterus rufifrons flavigaster*, adults (p. 748)
- gg.* Hindneck and sides of neck olive-green, like back; under parts without any whitish. (Highlands of Guatemala.)  
*Basileuterus rufifrons salvini*, adults (p. 749)
- ff.* Auricular region entirely chestnut.
- g.* Darker; sides and flanks more strongly tinged with olive-green. (Nicaragua and Costa Rica.)  
*Basileuterus rufifrons delatitrii*, adults (p. 749)
- gg.* Lighter; sides and flanks less strongly tinged with olive-green. (Colombia, north to Chiriqui.)  
*Basileuterus rufifrons mesochrysus*, adults (p. 750)
- cc.* Auricular region without any chestnut.
- d.* A white superciliary stripe; crown chestnut, bordered laterally with black; median under parts whitish. (Highlands of Costa Rica and Chiriqui.)  
*Basileuterus melanogenys*, adults (p. 751)
- dd.* No white superciliary stripe; crown not chestnut.
- e.* Spot in front of eye, postocular streak, and part of auricular region black; superciliary stripe and median crown-stripe pale drab; under parts pale olive-yellowish. (Highlands of Costa Rica, Chiriqui, and Veragua.)  
*Basileuterus melanotis*, adults (p. 752)
- ee.* No black on side of head; superciliary region olive; median crown-stripe more or less yellow, sometimes partly orange-rufous or tawny; under parts bright yellow. (*Basileuterus culicivorus*.)
- f.* Back, etc., grayish, more or less tinged with yellowish olive.
- g.* Back, etc., darker and grayer. (Vera Cruz and Puebla, Mexico, to Costa Rica.) . . . *Basileuterus culicivorus culicivorus*, adults (p. 753)
- gg.* Back, etc., lighter, more tinged with yellowish olive.
- h.* Lateral crown-stripes broader, deeper black; median crown-stripe clear lemon yellow, without olive tips to feathers. (States of Guerrero and Jalisco, southwestern Mexico.)

- b. More olive above; rump, tail-coverts, and base of tail deeper buff; median under parts more strongly buffy, sides and flanks paler buffy olive. (Isthmus of Panama, Veragua, and Chiriqui.)

*Basileuterus semicervinus veraguensis*, adults (p. 756)

- bb. More sooty above; rump, etc., paler buff; median under parts more whitish, sides and flanks sooty olive. (Costa Rica to southern Honduras.)

*Basileuterus semicervinus leucopygius*, adults (p. 757)

### BASILEUTERUS BELLI BELLI (Giraud).

#### BELL'S WARBLER.

*Adult male*.—Upper parts, except pileum, plain olive-green, becoming dusky grayish on terminal portion of remiges; forehead and sides of crown black, inclosing a central crown-patch of chestnut; a broad superciliary stripe of clear gamboge or lemon yellow, extending to sides of occiput; lores black, sometimes chestnut posteriorly (next to eye); suborbital and auricular regions chestnut, this passing narrowly above the eye; malar region and under parts lemon yellow, more or less tinged with olive and passing into light olive-green on sides and flanks; bill brownish black; legs and feet pale brown (in dried skins); length (skins), 114–125 (118.6); wing, 55–62 (57.7); tail, 54–56 (54.7); exposed culmen, 9; tarsus, 21.<sup>1</sup>

*Adult female*.—Similar to the adult male and not always distinguishable, but usually (?) slightly lighter or more yellowish olive-green above; length (skins), 115–116 (115.3); wing, 54–59 (56.5); tail, 50–55 (52.2); exposed culmen, 9–9.5 (9.2); tarsus, 20.5–22 (21.1).<sup>2</sup>

*Young, first plumage*.—Above, including pileum, superciliary region, and lores, plain sepia or hister brown; the remiges and rectrices olive-green, as in adults; middle and greater wing-coverts tipped with light fulvous or cinnamon-buff, producing two rather distinct bands across wing; sides of head (except lores) plain olive, gradually fading into paler olive on throat and chest, this passing into tawny olive or raw umber on sides and flanks; abdomen, anal region, and under tail-coverts pale yellow (straw yellow).<sup>3</sup>

Southeastern Mexico, in States of Vera Cruz (Jalapa, Orizaba, Jico, etc.), Mexico (near City of Mexico), and Oaxaca (Llano Verde, Totontepec, Mount Zempoaltepec, Reyes, Cerro San Felipe, etc.).

*Muscicapu belli* GIRAUD, Sixteen Species Texan Birds, 1841, folio 15, pl. 4, fig. 2 ("Texas;" type now in coll. U. S. Nat. Mus.<sup>4</sup>).

<sup>1</sup> Three specimens.

<sup>2</sup> Four specimens.

<sup>3</sup> Described from no. 143287, coll. U. S. Nat. Mus. (Biological Survey collection), from Cerro San Felipe, Oaxaca, Aug. 22, 1894; Nelson and Goldman. This specimen is beginning to assume the adult plumage, the scapulars and lower back being olive-green, while yellowish feathers are appearing in the supra-auricular region and on sides of chin.

<sup>4</sup> The type specimen is so faded that its certain identification with one or another of the three forms here differentiated is almost impossible. It seems, however, to be nearer the one from eastern Mexico than either of the others.

*Setophaga belli* BAIRD, Stansbury's Rep. Gt. Salt Lake, 1852, 329 ("Texas").

[*Setophaga*] *belli* GRAY, Hand-list, i, 1869, 245, no. 3556, part.

*Basileuterus belli* SCLATER, Proc. Zool. Soc. Lond., 1855, 65 (crit.); 1859, 374 (Llano Verde and Totontepec, Oaxaca).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 305 (synonymy); Review Am. Birds, 1865, 260, part (Orizaba, Vera Cruz).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (temp. reg. Vera Cruz).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 313, part (Mexico).—COOPER, Birds Col. Val., 1878, 335 (synonymy).—RIDGWAY, Nom. N. Am. Birds, 1881, no. 134.—SALVIN and GODMAN, Biol. Centr.-Am., Aves., i, 1881, 174, part.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 395, part (near City of Mexico; Jalapa and Orizaba, Vera Cruz; Llano Verde, Oaxaca).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 693, part.

[*Basileuterus*] *belli* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

*B[asileuterus] belli* RIDGWAY, Man. N. Am. Birds, 1887, 532, part.

*Basileuterus belli* SCLATER, Cat. Am. Birds, 1862, 35 (Orizaba).—RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 216.

*Basileuterus chrysophrys* BONAPARTE, Consp. Av., i, 1850, 314 (Real Ariba, Mexico; coll. Berlin Mus.; ex *Sylvia chrysophrys* Lichtenstein, manuscript).—SCLATER, Proc. Zool. Soc. Lond., 1857, 202 (Jalapa, Vera Cruz).

#### BASILEUTERUS BELLI SCITULUS Nelson.

##### GUATEMALAN WARBLER.

Similar to *B. b. belli* but larger; olive-green of upper parts darker or duller; chestnut of crown and sides of head lighter and brighter, the latter involving more (sometimes most) of loreal region; yellow of under parts averaging slightly brighter.

*Adult male*.—Length (skins) 114–127 (123.2); wing, 56–65 (62.5); tail, 52–62 (58.7); exposed culmen, 9.5–10.5 (10); tarsus, 20–22 (21).<sup>1</sup>

*Adult female*.—Length (skins), 125; wing, 55–61 (58); tail, 53–58

1881, 174, part (Guatemala).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 395, part (Volcan de Fuego, Volcan de Agua, and Dueñas, Guatemala).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 693, part (Guatemala).

[*Basileuterus*] *belli* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part (Guatemala).

*B[asileuterus] belli* RIDGWAY, Man. N. Am. Birds, 1887, 532, part (Guatemala).

*Basileuterus belli scitulus* NELSON, Auk, xvii, July, 1900, 268 (Tolos Santos, Guatemala; coll. U. S. Nat. Mus.).

### BASILEUTERUS BELLI CLARUS Ridgway.<sup>1</sup>

#### CHILPANCINGO WARBLER.

Similar to *B. b. scitulus* in the lighter and brighter chestnut of crown and sides of head, more extensively chestnut lores, and brighter yellow of under parts, but tarsus much longer and olive-green of upper parts lighter and more yellowish even than in *B. b. belli*.

*Adult male*.—Length (skins), 124–125 (124.5); wing, 63; tail, 59–60 (59.5); exposed culmen, 10; tarsus, 23–24 (23.5).<sup>2</sup>

*Adult female*.—Length (skins), 115–120 (117.5); wing, 56–58 (57); tail, 53–59 (56); exposed culmen, 9.5–10 (9.7); tarsus, 22–23.5 (22.7).<sup>2</sup>

Southwestern Mexico, in States of Guerrero (Chilpancingo) and Jalisco (San Sebastian).

*Basileuterus belli* (not *Muscicapa belli* Giraud) NELSON, Auk, xv, 1898, 159 (Chilpancingo, Guerrero; San Sebastian, Jalisco).

### BASILEUTERUS RUFIFRONS RUFIFRONS (Swainson).

#### RUFOUS-CAPPED WARBLER.

*Adults (sexes alike)*.—Pileum deep cinnamon-rufous or rufous-chestnut, with an indistinct and sometimes nearly obsolete median stripe of paler, this sometimes mixed with grayish, especially on the occiput, and sometimes white anteriorly (on median line of forehead); hindneck and sides of neck olive-gray; rest of upper parts plain grayish olive-green, the edges of greater wing-coverts, remiges, and rectrices brighter, more yellowish, olive-green; a sharply defined superciliary line of white, extending from nostril to sides of nape; lores and a triangular postocular space black or dark grayish, this passing narrowly above the eye; upper half (approximately) of auricular region cinnamon-rufous or rufous-chestnut, like pileum; lower portion of auricular region, anterior portion of malar region, and chin white, the first sometimes faintly flecked with grayish; throat, chest, and upper breast lemon or gamboge yellow; lower breast, abdomen, and under tail-coverts white, often tinged with yellow; sides and flanks light buffy brown; bill brownish black; iris reddish brown;<sup>3</sup> legs and feet light brown (indried skins).

<sup>1</sup> Type, no. 143292, coll. U. S. Nat. Mus. (Biological Survey collection), adult male; mountains near Chilpancingo, Guerrero, Dec. 24, 1894; Nelson and Goldman.

<sup>2</sup> Two specimens.

<sup>3</sup> C. Sartorius, manuscript.

*Young, first plumage.*—Above, including pileum, plain olive, becoming olive-greenish on edges of remiges and rectrices; middle and greater wing-coverts tipped with brownish buff, forming two rather distinct narrow bands across wing; sides of head plain olive, relieved by a buffy whitish supra-auricular streak, the lores more dusky; malar region, chin, throat, median portion of lower breast, abdomen, and under tail-coverts, pale dull buffy; chest, sides of breast, and sides plain pale buffy olive, the posterior portion of sides, and flanks, more decidedly buffy.

*Adult male.*—Length (skins), 115–118 (115.7); wing, 51–53 (52); tail, 53–57 (55.2); exposed culmen, 10–11 (10.6); tarsus, 20–22 (20.9).<sup>1</sup>

*Adult female.*—Length (skins), 110–123 (118.2); wing, 48–51 (49.6); tail, 52–58 (54.4); exposed culmen, 10–11 (10.6); tarsus, 18–22 (20.3).<sup>2</sup>

Southeastern Mexico, in States of Vera Cruz (Cordova; Jalapa; Mirador; Orizaba; Jico; Pasa Nueva), Puebla (Huachinango), Oaxaca (La Parada; Cinco Señores; Tuxtepec; near Totontepec), and Chiapas (Ocuilapa, August 27; Guichicovi, September); Guatemala (in winter only?).

*Setophaga rufifrons* SWAINSON, Anim. in Menag., 1838, 294 (Mexico).

[*Setophaga*] *rufifrons* GRAY, Gen. Birds, i, 1846, 265.

[*Setophaga*] *rufifrons* GRAY, Hand-list, i, 1869, 245, no. 3554.

[*Basileuterus*] *rufifrons* BONAPARTE, Consp. Av., i, 1850, 314.

*Basileuterus rufifrons* SCLATER, Proc. Zool. Soc. Lond., 1856, 291 (Cordova, Vera Cruz); 1858, 299 (La Parada, Oaxaca); 1865, 284 (monogr.); Cat. Am. Birds, 1862, 35 (Mexico).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 296, footnote; Review Am. Birds, 1865, 248, part (Jalapa and Mirador, Vera Cruz).—SEMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (temp. reg. Vera Cruz).—LEACH, Rep. Bds. U. S. Nat. Mus., vol. I, 1876, 10 (Guichicovi, Chiapas).



and sides of neck; yellow of chest sharply defined posteriorly against the purer white of middle breast and abdomen; sides of breast gray, passing into grayish buffy on flanks; tail averaging longer, and bill much smaller.

*Adult male*.—Length (skins), 113–125 (120.3); wing, 52–55 (52.8); tail, 55–58 (57.2); exposed culmen, 8.5–9 (8.9); tarsus, 20–23 (20.8).<sup>1</sup>

*Adult female*.—Length (skins), 115–120 (117.7); wing, 49–54 (52); tail, 53–59 (56); exposed culmen, 9; tarsus, 20–21 (20.6).<sup>2</sup>

Mountain districts of eastern Mexico, in States of Nuevo Leon (Monterey), San Luis Potosi (Hacienda Angostura), and northern Vera Cruz (Maltrata).

*Basileuterus rufifrons jouyi* RIDGWAY, Proc. U. S. Nat. Mus., xv, no. 895, July 18, 1892, 119 (Hacienda Angostura, San Luis Potosi; coll. U. S. Nat. Mus.).—JOUY, Proc. U. S. Nat. Mus., xvi, 1893, 777, part (Hacienda Angostura).

### BASILEUTERUS RUFIFRONS DUGESI Ridgway.

#### DUGÈS' WARBLER.

Similar to *B. r. jouyi*, but upper parts much browner (hair brown, tinged with olive, instead of gray, tinged with olive), sides of breast pale buffy brown, instead of gray, and flanks more decidedly buffy; tail averaging longer.

*Young, first plumage*.<sup>3</sup>—Above, including entire pileum, plain brown (intermediate between broccoli and sepia), the middle and greater wing-coverts rather broadly tipped with cinnamon, forming two distinct bands across wing; a supra-auricular stripe of brownish buff, extending anteriorly to above eyes; auricular region similar in color to pileum; malar region and under parts deep buff, slightly paler posteriorly.

*Adult male*.—Length (skins), 118–124 (121.7); wing, 50–59 (52.9); tail, 55.5–63 (58.8); exposed culmen, 9–10 (9.2); tarsus, 20–23 (21.2).<sup>4</sup>

*Adult female*.—Length (skins), 116–124 (120.3); wing, 49–52 (50); tail, 52–59 (56.2); exposed culmen, 8.5–10 (9.1); tarsus, 19–22 (20.1).<sup>5</sup>

Western and central Mexico, in States of Sinaloa (Plomosas; Sierra Madre near Mazatlan), Jalisco (San Sebastian; Barranca Ibarra; Zapotlan; Talpa), Michoacan (Patzcuaro), Guerrero (Tlapa), Oaxaca (Juquila; Cuicatlan; Oaxaca), Morelos (Cuernavaca), Puebla (Tochimilco), Hidalgo (Real del Monte; El Chico), and Guanajuato.

*Basileuterus rufifrons* (not *Setophaga rufifrons* Swainson) BAIRD, Review Am. Birds, 1865, 248, part (Sierra Madre near Mazatlan).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 270, (Sierra Madre).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 175, part (Sierra Madre).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 397, part.

<sup>1</sup> Six specimens.

<sup>2</sup> Three specimens.

<sup>3</sup> The young of *B. r. jouyi* not seen. Compared with the young of *B. r. rufifrons* that of *B. r. dugesi* is strikingly different, being conspicuously browner (or less olive) above and much more strongly and purely buff below.

<sup>4</sup> Thirteen specimens.

<sup>5</sup> Eight specimens.

[*Basileuterus*] *rufifrons* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

*B[asil]euterus* *rufifrons* RIDGWAY, Man. N. Am. Birds, 1887, 532, part.

*Basileuterus rufifrons dugesi* RIDGWAY, Proc. U. S. Nat. Mus., xv, no. 895, July 18, 1892, 119 (Guanajuato, Mexico; coll. U. S. Nat. Mus.).

*Basileuterus rufifrons jouyi* (not of Ridgway) JOURY, Proc. U. S. Nat. Mus., xvi, 1893, 777, part (Barranca Ibarra, Jalisco).

#### BASILEUTERUS RUFIFRONS CAUDATUS Nelson.

##### LONG-TAILED WARBLER.

Similar to *B. r. dugesi*, but with much less of rufous on pileum, the median portion of occiput and crown being brownish gray, this sometimes extending to the forehead; back, etc., slightly grayer; bill smaller, and tail longer.

*Adult male*.—Length (skins), 123; wing, 50–51 (50.5); tail, 59–60 (59.5); exposed culmen, 8.5–9 (8.7); tarsus, 20–22 (21).<sup>1</sup>

*Adult female*.—Length (skins), 124; wing, 50; tail, 58.5–61.5 (60); exposed culmen, 9–9.2 (9.1); tarsus, 20.5.<sup>1</sup>

Northwestern Mexico, in States of Sonora (Alamos, etc.,) and Chihuahua (Batopilas; Napolera).

*Basileuterus rufifrons* (not *Setophaga rufifrons* Swainson) ALLEN, Bull. Am. Mus. N. H., v, 1893, 41 (Napolera, n. w. Chihuahua, Dec. 8).

*Basileuterus rufifrons caudatus* NELSON, Proc. Biol. Soc. Wash., xiii, May 29, 1899, 29 (Alamos, Sonora; coll. U. S. Nat. Mus.).

#### BASILEUTERUS RUFIFRONS FLAVIGASTER (Nelson).

##### CHIAPAS WARBLER.

Similar to *B. r. rufifrons*, but with the under parts more extensively yellow, sometimes entirely yellow, except the anal region or lower abdomen, which are yellowish white or pale buffy yellow, and sides

**BASILEUTERUS RUFIFRONS SALVINI (Cherrie).****SALVIN'S WARBLER.**

Similar to *B. r. flavigaster*, but hindneck and sides of neck olive (not distinctly different from color of back, etc.), instead of gray; back, etc., rather browner olive-green; under parts entirely yellow; length (skin)<sup>1</sup> 127; wing, 53; tail, 59; exposed culmen, 11; tarsus, 21.

Highlands of Guatemala (Coban, Vera Paz).

Having but a single specimen of this form I am not able to form a very decided opinion as to its status. Only these two facts are clearly evident: (1) that typical *B. rufifrons* grades insensibly into the present bird through the intermediate series named *B. flavigaster* by Mr. Nelson, whose type is distinguishable from Mr. Cherrie's type of *B. salvini* only by the distinctly gray neck and slightly clearer olive-green color of the back, etc., other apparent differences representing characters which vary with season or with the individual; and (2) that the varying amount of yellow on the under parts is wholly independent of relative age of the specimens. The puzzling element in the case is that in Guatemala occur specimens which are indistinguishable from *B. r. flavigaster* and *B. r. rufifrons*. Possibly these are migrants, all the resident birds representing *B. r. salvini*.

*Basileuterus delatirii* (not of Bonaparte) SALVIN and SCLATER, Ibis, 1860, 274 (Dueñas, Guatemala).—BAIRD, Review Am. Birds, 1865, 249, excl. syn., part (Coban, Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 176 (Dueñas, Volcan de Fuego, Volcan de Agua, Coban, Lanquin, and Cahabon, Guatemala; not "Nicaragua").—SHARPE, Cat. Birds Brit. Mus., x, 1885, 396 (Diego, Calderas, La Trinidad, etc., Guatemala).

[*Basileuterus*] *delatirii* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10.

*B[asileuterus] delatirii* RIDGWAY, Man. N. Am. Birds, 1887, 532, part.

[*Setophaga*] *delatirii* GRAY, Hand-list, i, 1869, 245, no. 3555.

*Basileuterus salvini* CHERRIE, Proc. U. S. Nat. Mus., xiv, no. 855, Sept. 4, 1891, 342 (Coban, Guatemala; coll. U. S. Nat. Mus.).

**BASILEUTERUS RUFIFRONS DELATRII (Bonaparte).****DELATTRE'S WARBLER.**

Similar to *B. r. salvini*, but chestnut of the pileum and auricular region darker, the latter involving the whole of the auricular region instead of the upper and posterior portions only; hindneck and sides of neck grayish (darker than in *B. r. rufifrons* and *B. r. flavigaster*); olive-green of back, etc., darker.

*Young, first plumage.*—Above, including pileum and sides of head, plain brownish olive; greater wing-coverts, remiges, and rectrices dark brownish gray, edged with olive-green, as in adults; middle and greater wing-coverts tipped with cinnamon-buff, forming two distinct

<sup>1</sup> Specimen without sex determined; no. 30700, coll. U. S. Nat. Mus., Coban, Vera Paz, Guatemala, Nov. 15, 1859; O. Salvin. Type of *Basileuterus salvini* Cherrie.

hands across wing; an indistinct supra-auricular streak of paler olive; chin whitish; throat, chest, and sides of breast pale brownish olive; rest of under parts pale yellow (between sulphur and straw yellow), the sides and flanks tinged with olive.

*Adult male*.—Length (skins), 112–133 (121.2); wing, 54–60 (56.5); tail, 53–57 (54.7); exposed culmen, 9.5–11 (10.1); tarsus, 20–21.5 (20.9).<sup>1</sup>

*Adult female*.—Length (skins), 111–133 (119.7); wing, 53–58.5 (55.1); tail, 52–55.5 (53.5); exposed culmen, 10–11 (10.4); tarsus, 20–21.5 (20.9).<sup>2</sup>

Nicaragua and Costa Rica (San José; Cartago; San Juan; Guaitil; Grecia; Alajuela, etc.)

*Basileuterus delatirii* BONAPARTE, Compt. Rend., xxxviii, 1854, 383 (Nicaragua).—CABANIS, Journ. für Orn., 1860, 325 (Costa Rica).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 340 (crit.; Costa Rica), 527 (San José, Costa Rica; descr. young); Auk, ix, 1892, 22 (San José, Costa Rica; descr. nest and eggs), Expl. Zool. Costa Rica, i, Aves, 1893, 14 (Boruca and Buenos Aires, s. w. Costa Rica).

*Basileuterus delatirii* LANTZ, Trans. Kansas Ac. Sci. for 1896–97 (1899), 223 (Grenada, Nicaragua)

*B[asileuterus] delatirii* RIDGWAY, Man. N. Am. Birds, 1887, 532, part.

*Basileuterus megalochrysus* (not of Sclater, 1860) BAIRD, Review Am. Birds, 1865, 250, part (San José, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 95 (San José, Guaitil, and Grecia, Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 294 (San José, Costa Rica).—BOUCARD, Proc. Zool. Soc. Lond., 1878, 52 (San José and Cartago, Costa Rica).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 176, part (San José, Guaitil, Grecia, and Irazú, Costa Rica).—NUTTING, Proc. U. S. Nat. Mus., v, 1883, 499 (San José).—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 107 (San José, Alajuela, Naranjo de Cartago, Grecia, and Monte Redondo, Costa Rica).—UNDERWOOD, Ibis, 1896, 434 (Volcan de Miravalles, Costa Rica).

[*Basileuterus*] *megalochrysus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part (Costa Rica).

Colombia, including Isthmus of Panama (Paraiso Station; Panama; Santa Fé, Chitra, and Calobre, Veragua; Volcan de Chiriqui).

[*Basileuterus*] *brunneiceps* (not *Setophaga brunneiceps* Lafresnaye and D'Orbigny) BONAPARTE, Consp. Av., i, 1850, 314<sup>1</sup> (Bogota, Colombia).

*Basileuterus delatirii* (not of Bonaparte) SCLATER, Proc. Zool. Soc. Lond., 1855, 144 (Bogota).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Panama R. R.).

*B[asileuterus] delatirii* RIDGWAY, Man. N. Am. Birds, 1887, 522, part.

*Basileuterus mesochrysus* SCLATER, Proc. Zool. Soc. Lond., 1860, 251 (Bogota, Colombia; coll. P. L. Sclater); Cat. Am. Birds, 1862, 35 (Colombia).—BAIRD, Review Am. Birds, 1865, 250, part (Bogota).—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Santa Fé, Veragua); 1870, 183 (Chitra and Calobre, Veragua).—SALVIN and GODMAN, Ibis, 1879, 198 (Manaure, prov. Santa Marta, Colombia, alt. 2,700 ft.); 1880, 117 (Santa Marta); Biol. Centr.-Am., Aves, i, 1881, 176, part (Volcan de Chiriqui, Chitra, Calobre, and Santa Fé, Veragua; Paraiso Station, Panama R. R.; Sierra Nevada de Santa Marta and Bogota, Colombia).—BANGS, Proc. Biol. Soc. Wash., xii, 1898, 144 (Santa Marta), 180 (Palomina, Santa Marta).—ALLEN, Bull. Am. Mus. N. H., xiii, 1900, 176 (Bonda, etc., Santa Marta).

[*Basileuterus*] *mesochrysus* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10, part.

[*Basileuterus delatirii*.] Subsp.  $\alpha$ . *Basileuterus mesochrysus* SHARPE, Cat. Birds, Brit. Mus., x, 1885, 396, part (localities in Colombia, incl. Veragua).

*Basileuterus delatirii mesochrysus* CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 342, in text (crit.).

#### BASILEUTERUS MELANOGENYS Baird.

##### BLACK-CHEEKED WARBLER.

*Adults (sexes alike).*—Crown chestnut,<sup>2</sup> margined laterally with a line of black, the black lines of opposite sides converging on the median portion of the forehead, where sometimes forming a black spot; sides of occiput (sometimes of nape also) sooty blackish; median portion of occiput and nape, hindneck, and sides of neck plain dark brownish gray or olive, passing into a more decided olive hue on back, scapulars, rump, and upper tail-coverts; wings and tail dusky brownish gray, the secondaries and rectrices edged with olive or light brownish olive, the primaries edged with a paler and usually more grayish hue; a broad superciliary stripe of white, more or less broken anteriorly (on supraloral portion) by mixture of black; sides of head, including loreal, orbital, and auricular regions and anterior portion of malar region black, the first sometimes broken by admixture of white on anterior portion; chin (sometimes upper throat also) dull white flecked or barred with black, the middle or posterior portion of the malar region also mixed black and whitish; rest of under parts dull yellowish white, shading into pale olive laterally, this more grayish (sometimes nearly clear gray) anteriorly on sides of breast, etc.; chest faintly shaded with gray or pale grayish olive; maxilla dark brownish with paler

<sup>1</sup> Not a new name, but Lafresnaye and D'Orbigny's species wrongly identified and referred to the genus *Basileuterus*.

<sup>2</sup> These chestnut feathers elongated, forming an erectile bushy crest.

tomia; mandible brownish white (in dried skins); legs and feet pale horn brownish (in dried skins).

*Young, first plumage.*—Pileum and sides of head plain deep sooty brown or sepia; rest of upper parts plain olive-brown, the remiges and rectrices as in adults; middle and greater wing-coverts tipped with pale brownish buff, forming two distinct narrow bands across wing; a supra-auricular streak of brownish buff; chin and upper throat dusky, the feathers partly dull grayish white; lower throat dull brownish buffy white; chest, breast, sides and flanks grayish brown, intermixed with more rusty brown; median portion of breast and abdomen dull buffy white.

*Adult male.*—Length (skins), 121–132 (126); wing, 59–66 (63); tail, 58–62 (59.7); exposed culmen, 10–12 (11); tarsus, 23.<sup>1</sup>

*Adult female.*—Length (skins), 120–134 (127.2); wing, 58–65 (61); tail, 55–61 (58); exposed culmen, 11; tarsus, 23.<sup>1</sup>

Highlands of Costa Rica (San José; La Palma; Volcan de Irazú) and Chiriqui (Volcan de Chiriqui; Boquete).

*Basileuterus melanogenys* BAIRD, Review Am. Birds, May, 1865, 248 (San José?, Costa Rica; coll. U. S. Nat. Mus.).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 46 (San José).—SALVIN, Proc. Zool. Soc. Lond., 1870, 183 (Volcan de Chiriqui, Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 174, pl. 10, fig. 3 (San José and Volcan de Irazú, Costa Rica; Volcan de Chiriqui).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 398.—ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 107 (La Palma de San José).—CHERRIE, Proc. U. S. Nat. Mus., xiv, 1891, 528 (descr. young).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 60 (Boquete and Volcan de Chiriqui, Chiriqui, 4,500–10,200 ft.).

[*Basileuterus*] *melanogenys* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10.

#### BASILEUTERUS MELANOTIS Lawrence.



*Adult male*.—Length (skins), 119–128 (123.3); wing, 57–65 (61.7); tail, 50–57 (54); exposed culmen, 11; tarsus, 21–23 (22).<sup>1</sup>

*Adult female*.—Length (skins), 114–126 (122.2); wing, 59–64 (61.5); tail, 52–56 (54.2); exposed culmen, 11; tarsus, 22.<sup>2</sup>

Highlands of Costa Rica (Cervantes; Birris), Chiriqui (Volcan de Chiriqui; Boquete), and Veragua (Cordillera del Chucu).

*Basileuterus melanotis* LAWRENCE, Ann. Lyc. Nat. Hist. N. Y., ix, Apr., 1868, 95 (Cervantes, Costa Rica; coll. U. S. Nat. Mus.).—SALVIN, Ibis, 1869, 313 (Costa Rica).—FRANTZIUS, Journ. für Orn., 1869, 183 (Costa Rica).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 386 (Costa Rica; Cordillera del Chucu, Veragua).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 60 (Volcan de Chiriqui and Boquete, Chiriqui, 4,000 to 7,500 ft.).

*Basileuterus bivittatus melanotis* ZELEDON, Anal. Mus. Nac. Costa Rica, i, 1887, 107 (Costa Rica).

*Basileuterus bivittatus* (not *Muscicapa bivittata* Lafresnaye and D'Orbigny) SALVIN, Ibis, 1870, 108, part (Cordillera del Chucu, Veragua); Proc. Zool. Soc. Lond., 1870, 183 (do.).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 170, part (Cervantes and Birris, Costa Rica; Cordillera del Chucu, Veragua).

[*Basileuterus*] *bivittatus* SCLATER and SALVIN, Nöm. Av. Neotr., 1873, 10, part (Veragua; Costa Rica).

## BASILEUTERUS CULICIVORUS CULICIVORUS (Lichtenstein).

### LICHTENSTEIN'S WARBLER.

*Adults (sexes alike)*.—Pileum with two broad lateral stripes of black,<sup>3</sup> inclosing a median one of pale yellowish olive, the middle portion of which is usually yellow, rarely orange-tawny or rufous, the feathers with light yellowish olive tips; rest of upper parts plain deep olive-gray (olivaceous mouse gray), the primaries edged with paler and clearer gray; a broad superciliary stripe of yellowish olive; eyelids dull light yellowish; a dusky spot (more or less distinct) in front of eye, and postocular region usually more or less dusky; auricular region grayish olive, sometimes darker along upper margin, the lower portion usually finely streaked with dull whitish or pale yellowish; malar region and entire under parts lemon or gamboge yellow, passing into light yellowish olive-green on sides and flanks, the chest usually faintly tinged with the same; maxilla dark brown, mandible paler; legs and feet very pale yellowish brown or buffy (in dried skins).

*Adult male*.—Length (skins), 110–125 (122); wing, 58–64 (60); tail, 50–57 (51.8); exposed culmen, 9–11 (9.2); tarsus, 18–20.5 (19.2).<sup>4</sup>

<sup>1</sup> Six specimens, from Chiriqui.

<sup>2</sup> Four specimens, from Chiriqui.

<sup>3</sup> These black stripes becoming narrower and less distinct, sometimes obsolete, on forehead.

<sup>4</sup> Sixteen specimens.

*Adult female*.—Length (skins), 106–120 (111.9); wing, 55–62.5 (57); tail, 48–54 (51.1); exposed culmen, 9–10.5 (9.8); tarsus, 18.5–20 (19.1).<sup>1</sup>

Southern Mexico, in States of Vera Cruz (Mirador; Cordova; Jalapa; Orizaba; San Andreas Tuxtla), Puebla (Metlatoyuca), Oaxaca (Pluma; Coapam; Santo Domingo; Teotacingo), Tabasco (Teapa), Campeche (Apazote), and Chiapas (Ocuilapa); Guatemala (Choctum; Coban; Khamkal; Volcan de Agua; Volcan de Fuego); Costa Rica (Barranca; Gunitil; Grecia; Dota Mountains; San José; Naranjo de Cartago; Monte Redondo; Sabanilla de Alajuela). (No records for Salvador, Honduras, or Nicaragua.)

*Syleus culicivorus* LICHTENSTEIN, Preis-Verz. Mex. Vög., 1830, 2, no. 78 (Mexico; see Journ. für Orn., 1863, 67).

*B[anileuterus] culicivorus* CABANIS, Mus. Hein., i, 1850, 17 (Jalapa, Vera Cruz).

*Banileuterus culicivorus* BAIRD, Review Am. Birds, 1865, 245, part (N. Mexico, both sides; Choctum, Guatemala; Barranca, Costa Rica).—LAWRENCE, Ann. Lyc. N. Y., ix, 1868, 95 (Barranca, Gunitil, Grecia, and Dota Mountains, Costa Rica).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (temp. region Orizaba, Vera Cruz).—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 312, part.—COUES, Birds Col. Val., 1878, 335 (synonymy).—BOUCAUD, Proc. Zool. Soc. Lond., 1878, 52 (San José, Costa Rica); Liste Ois. Guat., 1878, 30 (Guatemala).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 171, part (Jalapa, Cordova, etc., Vera Cruz; Teotacingo, Oaxaca; Volcan de Fuego, Volcan de Agua, Coban, Khamkal, Choctum, etc., Guatemala; Costa Rican localities).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 383, part (Oaxaca; Jalapa; localities in Guatemala and Costa Rica).—ZELEDON, Proc. U. S. Nat. Mus., viii, 1885, 105 (Costa Rica); Anal. Mus. Nac. Costa Rica, i, 1887, 107 (Sabanilla de Alajuela, Naranjo de Cartago, Grecia, and Monte Redondo, Costa Rica).—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 25 (Jalapa, Vera Cruz).—NELSON, Auk, xv, 1898, 159, part (Pluma, w. Oaxaca).

*Chondestes culicivorus* (Baird) Lichtenstein, Preis-Verz. Mex. Vög., 1830, 2, no. 78, part.



[*Setophaga*] *culicivora* GRAY, Hand-list, i, 1869, 244, no. 3544.

*Basileuterus brasieri* (not *Muscicapa brasieri* Giraud) SCLATER, Proc. Zool. Soc. Lond., 1855, 66; 1856, 292 (Cordova, Vera Cruz); 1859, 374 (Oaxaca); Cat. Am. Birds, 1862, 34 (Oaxaca).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 303 (synonymy).—SALVIN and SCLATER, Ibis, 1860, 274 (Volcan de Fuego, Guatemala).

### BASILEUTERUS CULICIVORUS BRASHERII (Giraud).

#### BRASHER'S WARBLER.

Similar to *B. c. culicivorus*, but color of upper parts paler and more yellowish gray, black lateral stripes of pileum narrower, and under parts slightly brighter yellow: averaging slightly larger.

*Adult male*.—Length (skins), 117–126 (121.2); wing, 60–63 (61.5); tail, 52–57 (53.6); exposed culmen, 9.5–10.5 (10); tarsus, 19.5–20 (19.9).<sup>1</sup>

*Adult female*.—Length (skins), 112–119 (116); wing, 57–58 (57.3); tail, 50.5–51.5 (51); exposed culmen, 9.5–10 (9.8); tarsus, 19–21 (20).<sup>2</sup>

Northeastern Mexico, in States of Tamaulipas (Alta Mira; Ciudad Victoria) and San Luis Potosi (Jilitla).

*Muscicapa brasierii* (typographical error<sup>3</sup>) GIRAUD, Sixteen Species Texan Birds, 1841, folio 25, pl. 6, fig. 2 ("Texas;" type in U. S. Nat. Mus.).—SCLATER, Proc. Zool. Soc. Lond., 1855, 66.

*Basileuterus brasherii* BERIER, Bull. Nutt. Orn. Club, v, Oct., 1880, 239 (corrects spelling of specific name).<sup>3</sup>

*Basileuterus culicivorus* (not *Sylvia culicivora* Lichtenstein) RIDGWAY, Proc. U. S. Nat. Mus., iii, 1880, 216; Nom. N. Am. Birds, 1881, no. 133.—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 692, part.—RICHMOND, Proc. U. S. Nat. Mus., xviii, 1896, 632 (Alta Mira, Tamaulipas).

*B[asileuterus] culicivorus* RIDGWAY, Man. N. Am. Birds, 1887, 531, part.

### BASILEUTERUS CULICIVORUS FLAVESCENS<sup>4</sup> Ridgway.

#### JALISCO WARBLER.

Agreeing with *B. c. brasherii* in lighter and more yellowish gray of back, etc., deeper yellow of under parts, and in larger size, but upper parts still more strongly washed with olive-yellow, black lateral crown-stripes broader (as in *B. c. culicivorus*), and yellow of under parts still deeper; differing from both *B. c. culicivorus* and *B. c. brasherii* in having the median crown-stripe almost wholly clear lemon or canary yellow (the feathers without yellowish olive tips) and the superciliary stripe lighter and more yellow.

*Adult male*.—Length (skins), 123–125 (124); wing, 61–62 (61.5); tail, 52–56 (54); exposed culmen, 9.5–10.5 (10); tarsus, 20–20.5 (20.2).<sup>5</sup>

<sup>1</sup> Four specimens.

<sup>2</sup> Three specimens.

<sup>3</sup> Species named in honor of Mr. Philip Brasher, of Brooklyn, New York.

<sup>4</sup> Type, no. 156147, coll. U. S. Museum (Biological Survey collection), adult male, San Sebastian, Jalisco, Mar. 17, 1897; Nelson and Goldman.

<sup>5</sup> Two specimens.

Southwestern Mexico, in State of Jalisco (San Sebastian).

*Basileuterus culicivorus* (not *Sylvia culicivora* Lichtenstein) NELSON, Auk, xv, 1898, 159, part (near San Sebastian, mta. of w. Jalisco).

**BASILEUTERUS CULICIVORUS GODMANI** Berlepsch.

**GODMAN'S WARBLER.**

Similar to *B. c. flavescens*, but upper parts still more strongly washed with yellow (the general color decided olive-green) and superciliary stripe darker olive-green (the posterior portion concolor with auricular region, instead of decidedly paler and more yellowish); averaging slightly larger.

*Adult male*.—Length (skins), 114–126 (120.4); wing, 58–65 (62.2); tail, 50–56.5 (54.1); exposed culmen, 9.5–10.5 (9.8); tarsus, 19.5–21.5 (20.1).<sup>1</sup>

*Adult female*.—Length (skins), 112–116 (114.7); wing, 57–62 (60); tail, 49–54 (52); exposed culmen, 9.5; tarsus, 19.5–20 (19.7).<sup>2</sup>

Chiriqui (Volcan de Chiriqui; Boquete), and Veragua (Calovevora);<sup>3</sup> southwestern Costa Rica (San Marcos)?<sup>4</sup>

*Basileuterus culicivorus* (not *Sylvia culicivora* Lichtenstein) SALVIN, Proc. Zool. Soc. Lond., 1870, 183 (Volcan de Chiriqui and Calovevora, Veragua).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 171, part (localities in Veragua). SHARPE, Cat. Birds Brit. Mus., x, 1885, 383, part (Veragua).

[*Basileuterus*] *culicivorus* SCLATER and SALVIN, Nouv. Av. Neotr., 1873, 10, part. *Basileuterus godmani* BERLEPSCH, Auk, v, Oct., 1888, 450 (Veragua; coll. Count von Berlepsch).

(?) *Basileuterus godmani* CHERRIE, Anal. Inst. Fis.-Geog. Nav. Costa Rica, vi, 1893, 10 (San Marcos, s. w. Costa Rica; crit.; descriptions).

[*Basileuterus*] *culicivorus godmani* BERLEPSCH, Auk, v, Oct., 1888, 450, in text.

*Basileuterus culicivorus godmani* BANGS, Proc. New Engl. Zool. Club, iii, Jan. 30,

1891, 69; Volcan de Chiriqui and Boquete, Chiriqui, 1890s to 1900s.

and upper eyelid pale dull buff or buffy olive; a triangular dusky loreal space and a less distinct (sometimes obsolete) dusky postocular spot or streak; under parts pale buff, the abdomen (sometimes throat also) nearly (sometimes quite) white, the sides and flanks buffy brown, the latter more strongly suffused with buff; chest sometimes indistinctly barred with pale olive; bill brownish black or blackish brown, the mandible sometimes paler brown; iris dark brown;<sup>1</sup> legs and feet pale horn brown (in dried skins).

*Adult male*.—Length (skins), 119.5–124 (122.5); wing, 62–64 (63.1); tail, 50–53.6 (51.3); exposed culmen, 11–13 (11.8); tarsus, 21–23 (22.4).<sup>2</sup>

*Adult female*.—Length (skins), 119–122 (120.5); wing, 62; tail, 49–50 (49.5); exposed culmen, 11–12 (11.5); tarsus, 21–23 (22).<sup>3</sup>

Isthmus of Panama (south to Panama Railroad) and southwestern Costa Rica (Rio Naranjo; Boruca; Buenos Aires).

*Basileuterus uropygialis* (not of Sclater, 1864) SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 347 (Panama R. R.).—BAIRD, Review Am. Birds, 1865, 246 (Panama R. R.).—SALVIN, Proc. Zool. Soc. Lond., 1867, 136 (Santa Fé, Veragua; crit.); 1870, 183 (Bugaba, Veragua).

[*Basileuterus*] *uropygialis* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 10 (Panama).

*Basileuterus semicervinus* (not of Sclater) LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 322 (Panama R. R.).

*Basileuterus leucopygius* (not of Sclater and Salvin) SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 172, part (Bugaba and Santa Fé, Veragua; Panama R. R.).

[*Basileuterus leucopygius*.] Subsp.  $\alpha$ . *Basileuterus veraguensis* SHARPE, Cat. Birds Brit. Mus., x, 1885, 403 (Paraiso Station, Panama R. R.; coll. Brit. Mus.).

*Basileuterus leucopygius veraguensis* BANGS, Auk, viii, Oct., 1901, 368 (Divala, Chiriqui); Proc. New Engl. Zool. Club, iii, 1902, 60 (Boquete, Chiriqui, 4,000 ft. alt.).

*Basileuterus veraguensis* CHERRIE, Anal. Inst. Fis.-Geog. Nac. Costa Rica, vi, 1893, 12 (Rio Naranjo, s. w. Costa Rica; crit.; habits; song); Expl. Zool. Costa Rica, i, Aves, 1893, 14 (Boruca and Buenos Aires, s. w. Costa Rica).

#### **BASILEUTERUS SEMICERVINUS LEUCOPYGIUS (Sclater and Salvin).**

##### **COSTA RICAN BUFF-RUMPED WARBLER.**

Similar to *B. s. veraguensis*, but buff of tail-coverts and basal portion of tail paler (nearly cream buff), that of the tail more restricted (occupying about the basal half, instead of basal two-thirds, and quite hidden by the coverts); under parts paler, largely white medially, but sides and flanks much darker buffy olive, and the chest (sometimes breast also) spotted with pale olive.

*Adult male*.—Length (skins), 132; wing, 63–64 (63.5); tail, 51–52 (51.5); exposed culmen, 11.5–12 (11.7); tarsus, 23.5–24 (23.7).<sup>4</sup>

*Adult female*.—Length (skins), 116–130 (121.7); wing, 60–63 (60.9); tail, 48–50.5 (49.1); exposed culmen, 12–12.5 (12.2); tarsus, 20.5–23.5.<sup>5</sup>

<sup>1</sup> Heyde, manuscript.

<sup>2</sup> Four specimens.

<sup>3</sup> Two specimens.

<sup>4</sup> Two specimens.

<sup>5</sup> Four specimens.

Costa Rica (Angostura; Rio Frio; Tucurrique; Juiz: Volcan de Miravalles; La Palma; San Carlos), Nicaragua (Greytown; Los Sábolos), and southern Honduras (Segovia River).

*Basileuterus uropygialis* (not of Sclater) LAWRENCE, ANN. LYN. N. Y., viii, 1866, 180 (Greytown, Nicaragua); ix, 1868, 95 (Angostura and Juiz, Costa Rica) — SALVIN, Ibis, 1872, 313 (Nicaragua). — BOCCARD, Proc. Zool. Soc. Lond., 1878, 52 (San Carlos, Costa Rica).

*Basileuterus leucopygius* SCLATER and SALVIN, NOM. AV. NEOTR., 1873, 156 (Costa Rica; coll. P. L. Sclater). — SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 172, part (Greytown, Nicaragua; Tucurrique, Angostura, and Juiz, Costa Rica). — NUTTING, Proc. U. S. Nat. Mus., vi, 1884, 399 (Los Sábolos, Nicaragua; habits). — SHARPE, Cat. Birds Brit. Mus., x, 1885, 402. — ZELENY, Proc. U. S. Nat. Mus., viii, 1885, 105 (Costa Rica); Anal. Mus. Nac. Costa Rica, i, 1887, 107 (Angostura and Juiz, Costa Rica). — RICHMOND, Proc. U. S. Nat. Mus., xvi, 1893, 485 (Rio Frio, Costa Rica; habits; song). — UNDERWOOD, Ibis, 1896, 434 (Volcan de Miravalles, Costa Rica).

[*Basileuterus*] *leucopygius* SCLATER and SALVIN, NOM. AV. NEOTR., 1873, 10.

*Basileuterus semicervinus leucopygius* RIDGWAY [and NUTTING], Proc. U. S. Nat. Mus., v, Sept. 5, 1882, 390 (La Palma, Costa Rica; habits).

#### Genus *ERGATICUS* Baird.

*Ergaticus* BAIRD, Review Am. Birds, Apr., 1865, 237, 264. (Type, *Setophaga rubra* Swainson.)

Small "fly-catching" Mniotiltidae with the bill very small and narrow (narrower than deep at gonydeal angle and with maxilla from nostril not longer than hallux, without claw); ninth primary shorter than fourth; color mostly red.

Bill very small (length of maxilla from nostril not more than length of hallux without claw), narrow (width at gonydeal angle decidedly less than depth at same point); culmen nearly straight for basal half

This genus is very distinct from *Cardellina*, from which it differs in its relatively much shorter and more rounded wing, longer and decidedly rounded tail, more slender bill, longer rictal bristles, and very different style of coloration.

KEY TO THE SPECIES OF *ERGATICUS*.

*a.* General color red. (Adults.)

*b.* Auricular region silvery white, in sharp and conspicuous contrast with deep red of rest of head. (States of Vera Cruz, Oaxaca, Puebla, Mexico, Michoacan, and Jalisco, Mexico.) . . . . . *Ergaticus ruber*, adult male and female (p. 759)

*bb.* Auricular region satiny pink, concolor with rest of head. (Highlands of Guatemala and Chiapas.) . . *Ergaticus versicolor*, adult male and female (p. 760)

*aa.* General color tawny brown. (Young.)

*b.* Auricular region light silvery gray. . . . . *Ergaticus ruber*,<sup>1</sup> young (p. 759)

**ERGATICUS RUBER** (Swainson).**RED WARBLER.**

*Adult male*.—General color rich red, darker and inclining to claret brown on back and scapulars, lighter (poppy red or between poppy red and carmine) on rump and under parts of body; whole auricular region silvery white or pale silvery gray; lesser wing-coverts concolor with back; middle coverts dusky at base but with most of exposed portion poppy red; greater coverts dusky, broadly edged with dull poppy red; remiges and rectrices dusky, with dull reddish edgings, broadest and most distinct on tertials; bill horn brown, paler on mandible; legs and feet light horn brownish; length (skins), 115–126 (120.5); wing, 57–63 (59.7); tail, 55–64 (58.3); exposed culmen, 8–9 (8.5); tarsus, 18.5–20 (19.3); middle toe, 10–11 (10.2).<sup>2</sup>

*Adult female*.—Similar to the adult male but slightly duller in color; length (skins), 115–117 (116); wing, 60–61 (60.5); tail, 56–57 (56.5); exposed culmen, 8; tarsus, 20; middle toe, 9–10 (9.5).<sup>3</sup>

*Immature male (second year)*.—Quite similar in coloration to the adult female.

*Immature female (second year)*.—Similar to the adult female and immature male, but the red of a more orange hue, and color of occiput hindneck, back, and scapulars much duller, inclining to burnt sienna.

*Young, first plumage*.—General color cinnamon-brown or russet, darker above (inclining to mars brown on back and scapulars), paler, more tawny-cinnamon, below, the abdomen inclining to cinnamon-buff; auricular region pale silvery gray, in sharp and strong contrast with brown of rest of head; wings and tail dusky, the middle wing-coverts broadly tipped with cinnamon, the greater coverts broadly edged with the same, the remiges and rectrices edged with dull brownish red or reddish brown.

Highlands of Mexico, in States of Vera Cruz (Jalapa; Mirador; Las

<sup>1</sup> The young of *E. versicolor* not seen.

<sup>2</sup> Four specimens.

<sup>3</sup> Two specimens.

Vigas), Puebla (Mount Orizaba; Istatcihuatl; Chachapa; Teziutlan), Mexico (Tlalpam; Ajusco; near City of Mexico), Oaxaca (La Parada; Llano Verde; Cerro San Felipe; Mount Zempoaltepec), Michoacan (Patzcuaro), Jalisco (Sierra Nevada), Durango (Ciudad Durango), and Sinaloa (Sierra Madre).

*Setophaga rubra* SWAINSON, Philos. Mag., new ser., i, 1827, 368 (Valladolid, Mexico<sup>1</sup>); Isis, 1834, 784; Anim. in Menag., 1838, 293 (Toluca; coll. W. Swainson).—(?) BONAPARTE, Proc. Zool. Soc. Lond., 1837, 118 ("Guatemala").—BAIRD, in Stansbury's Rep. Gt. Salt Lake, 1852, 329 ("Texas").—SCLATER, Proc. Zool. Soc. Lond., 1855, 65.

[*Setophaga*] *rubra* GRAY, Hand-list, i, 1869, 244, no. 3532.

[*Curdellina*] *rubra* BONAPARTE, Consp. Av., i, 1850, 812.

*Curdellina rubra* CASSIN, Illustr. Birds Cal., Tex., etc., 1854, 265, pl. 43.—SCLATER, Proc. Zool. Soc. Lond., 1858, 292 (El Jacale, s. Mexico); 1858, 299 (La Parada, Oaxaca); 1859, 363 (Jalapa, Vera Cruz), 374 (Llano Verde, Oaxaca); 1864, 173 (City of Mexico); Cat. Am. Birds, 1862, 38 (Mexico).—BAIRD, Rep. Pacific R. R. Surv., ix, 1858, 296; Cat. N. Am. Birds, 1859, no. 216; Review Am. Birds, 1865, 264 (n. e. Mexico; pine reg. Jalapa; Mirador; highlands Orizaba).—DUGES, La Nature, i, 1868, 140 (Valley of Mexico).—SUMICHRAST, Mem. Bost. Soc. N. H., i, 1869, 546 (slp. reg. Vera Cruz).—FINSCH, Abh. Nat. Brem., 1870, 329 (Mazatlan).

*Setofaga rubra* LEIB, Proc. Ac. Nat. Sci. Phila., i, 1842, 140.

[*Asileuterus*] *ruber* CABANIS, Mus. Hein., i, 1850, 18 (Mexico).

[*Ergaticus*] *ruber* SCLATER and SALVIN, Nohl. Av. Neutr., 1873, 11.

*Ergaticus ruber* RIDGWAY, Nom. N. Am. Birds, 1881, no. 132.—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 164.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 406 (near City of Mexico; Jalapa, Oaxaca; Ciudad Durango).—FERRARI-PEREZ, Proc. U. S. Nat. Mus., ix, 1886, 138 (Istatcihuatl, Chachapa, and Teziutlan, Puebla).—AMERICAN ORNITHOLOGISTS' UNION, Check List, 1886, no. 691. —Cox, Auk, xii, 1895, 358 (Mount Orizaba, 11,000 ft.).—CHAPMAN, Bull. Am. Mus. N. H., x, 1898, 40 (Las Vigas, Vera Cruz, 8,000 ft. alt., breeding).

red tips; under parts of body, with under tail-coverts, poppy red, the feathers sometimes with indistinct terminal margins of pale pinkish; middle wing-coverts dusky tipped with pinkish red; greater coverts dusky edged with deeper and duller red; remiges and rectrices dusky with narrow and indistinct grayish red edgings, these more distinct on tertials; maxilla dusky horn color, mandible paler; iris orange;<sup>1</sup> legs and feet horn color; length (skins), 112–117 (115.8); wing, 58–63 (60.3); tail, 52–56.5 (54.8); exposed culmen, 8–9 (8.5); tarsus, 19–20 (19.3).<sup>2</sup>

*Adult female*.—Similar to the adult male but slightly duller in color, with the red of a slightly more orange hue; length (skins), 111–120 (114); wing, 57–59 (57.8); tail, 53–56 (54.4); exposed culmen, 7–9 (8.1); tarsus, 18–19.5 (18.8).<sup>3</sup>

Highlands of Guatemala (Chilasco, Totonicapam, Volcan de Fuego, Sololá, Todos Santos, Hacienda Chancol, Uspantán-Quitché, etc.) and Chiapas (Pinabete, San Cristobal, etc.).

*Cardellina versicolor* SALVIN, Proc. Zool. Soc. Lond., 1863, 188, pl. 24, fig. 1 (Chilasco, Vera Paz, Guatemala; coll. Salvin and Godman); Ibis, 1866, 192 (highest districts of Guatemala).—BAIRD, Review Am. Birds, 1865, 265 (Totonicapam, Guatemala).

[*Setophaga versicolor*] GRAY, Hand-list, i, 1869, 244, no. 3533.

[*Ergaticus versicolor*] SCLATER and SALVIN, Nom. Av. Neotr., 1873, 11.

*Ergaticus versicolor* SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1881, 165, pl. 11, fig. 1 (Volcan de Fuego, Sololá, Totonicapam, and Chilasco, Guatemala).—SHARPE, Cat. Birds Brit. Mus., x, 1885, 407.—NELSON, Auk, xv, 1898, 159 (central Chiapas).

*E[rgaticus] versicolor* RIDGWAY, Man. N. Am. Birds, 1887, 531.

### Genus CETHIDEA Gould.

*Certhidea* GOULD, Proc. Zool. Soc. Lond., pt. v, 1837, 7. (Type, *C. olivacea* Gould.)

Small long-legged, short-tailed, very plainly colored Mniotiltidæ with rather stout but acute bill; the tarsus much more than one-third as long as wing and more than one-half as long as tail; coloration plain olive, grayish brown or brownish gray above, paler, sometimes nearly white, beneath, the throat and a superciliary streak sometimes buffy or rufescent.

Bill rather small (exposed culmen less than two-thirds as long as tarsus, not longer than middle toe without claw, usually shorter), pointed, deeper than broad at base; culmen distinctly ridged, nearly or quite straight for basal half (more or less), the terminal portion very slightly curved and the extreme base sometimes slightly convex; gonys straight or very slightly convex, shorter than distance from nostril to tip of maxilla; maxillary tomium with an indistinct notch near tip (sometimes obvious only by very close inspection), its basal portion gradually curved downward from a point beneath or slightly anterior to nostril. Nostril

<sup>1</sup> Heyde and Lux, manuscript.

<sup>2</sup> Seven specimens.

<sup>3</sup> Five specimens

horizontally oval or subcuneate, with membrane above, behind, and below, but broadest above. Rictal bristles obsolete. Wing rather short, rounded (seventh, sixth, and fifth primaries longest and nearly equal, the eighth and fourth but little shorter, ninth not longer than second); wing-tip shorter than length of culmen. Tail short (less than twice as long as tarsus but more than two-thirds as long as wing), rounded, the rectrices broad and rounded at tip. Tarsus long (about twice as long as exposed culmen, much more than one-third as long as wing), slender, its scutella indistinct (sometimes obsolete laterally); middle toe, with claw, decidedly shorter than tarsus, its basal phalanx united for more than half its length to outer toe, for less than half to inner; lateral toes with claws reaching about to base of middle claw; hallux about as long as lateral toes but conspicuously stouter, its claw decidedly shorter than the digit.

*Coloration.*—Plain brownish gray, grayish brown, or olive above (the wings with narrow whitish bands in one species); under parts much paler than the upper, sometimes dull white, the throat and a superciliary streak sometimes buffy or rufescent.

*Nidification.*—Unknown.

*Range.*—Galapagos Archipelago, where represented on all the islands of the group.

I have long been convinced that *Certhidea* belonged to the Mniotiltidae rather than the Cœrebidæ, where it had been placed by Messrs. Selater and Salvin. This view of its relationships has been confirmed by an examination of its anatomical structure, made at my suggestion by Mr. F. A. Lucas.<sup>1</sup>

Owing to their extremely plain coloration, it is very difficult to construct a key to the species of this genus, a difficulty greatly enhanced



- bb.* Adult males never with throat or superciliary streak ochraceous-buff or tawny (rarely with a patch or tinge of ochraceous or buffy on throat).
- c.* Under parts darker, more olivaceous; upper parts browner or more olive; bill longer (distance from nostril to tip of maxilla 7.9–8.9).
- d.* Chin and under wing-coverts buffy; mandible usually black. (Tower Island.) ..... *Certhidea mentalis* (p. 766)
- dd.* Chin and under wing-coverts not buffy (white or pale yellowish); mandible never (?) black.
- e.* Paler, especially on sides and flanks; throat never inclining to ochraceous; smaller (wing not more than 53.8). (Abingdon and Bindloe islands.)  
*Certhidea fusca* (p. 766)
- ee.* Darker, especially on sides and flanks; throat sometimes tinged with or inclining to ochraceous; larger (wing 55.9–62 in males, 51.8–56.9 in females).
- f.* Smaller (wing of male 55.9–58.9, of female 51.8–53.8); pileum and sides of breast paler. (Wenman Island.) ..... *Certhidea becki* (p. 767)
- ff.* Larger (wing of male 62, of female 56.9); pileum and sides of breast darker. (Culpepper Island) ..... *Certhidea drownei* (p. 767)
- cc.* Under parts brownish white; upper parts grayer; bill shorter (never more than 8.4 from nostril to tip of maxilla, usually much less); rectrices narrowly tipped with whitish. (Hood Island and Gardner Island near Hood.)  
*Certhidea cinerascens* (p. 768)
- aa.* Wing with two narrow bars of whitish. (Barrington Island.)  
*Certhidea bifasciata* (p. 768)

### CERTHIDEA OLIVACEA Gould.

#### DARWIN'S CERTHIDEA.

*Adult male.*—Above plain pale olive, becoming more olive-gray on pileum and hindneck; rump and upper tail-coverts more buff yolive; wings and tail dusky grayish with pale olive edgings, the middle wing-coverts broadly tipped with wood brown, the greater coverts broadly edged with the same; a short superciliary stripe (extending from nostril to about 4 mm. behind eye), lower eyelid, malar region, chin, and throat (sometimes upper chest also) cinnamon-tawny, tawny-ochraceous, or cinnamon-rufous; lores and suborbital region pale dull buffy; auricular region light buffy grayish; median portion of breast and abdomen and under tail-coverts cream buff, the breast with more or less concealed central spots of the color of throat, the shorter under tail-coverts tinged with the same; sides and flanks grayish buffy or pale olive-brown; maxilla dusky, mandible pale brownish or brownish white (in dried skins); iris dark brown; tarsi horn brown, the toes darker; length (skins), about 91.5; wing, 55–57; tail, 37–40; bill from nostril, 7.<sup>1</sup>

*Adult female.*—Similar to the adult male but slightly smaller; under parts paler (more whitish), with less of the cinnamon-tawny or cinnamon-rufous color on throat, etc., usually with much less, sometimes with none; wing 54–56 (rarely exceeding 55).<sup>2</sup>

<sup>1</sup> Measurements from Rothschild and Hartert.

<sup>2</sup> According to Rothschild and Hartert.

*Young*.—Similar to the adults but plumage of looser texture; middle and greater wing-coverts margined terminally with cinnamon-buff; superciliary region, chin, throat, and chest dull buffy whitish or very pale dull grayish buffy.

(Galapagos Archipelago (James, Duncan, Albemarle, Indefatigable, Narborough, and Jervis islands).

*Certhidea olivacea* GOULD, Proc. Zool. Soc. Lond., pt. v, 1837, 7 (Galapagos I.); Zool. Voy. Beagle, iii, Birds, 1841, 106, pl. 44, part (James I.).—SALVIN, Trans. Zool. Soc. Lond., ix, pt. ix, 1876, 476, part (James I.; Indefatigable I.).—SCLATER, Cat. Birds Brit. Mus., xi, 1888, 28, part (James I., Indefatigable I.).—RIDGWAY, Proc. U. S. Nat. Mus., xii, 1888, 105, 119, 123, 125, part (James I.; Indefatigable I.); xix, 1897, 498 (monogr.).

[*Certhidea*] *olivacea* BONAPARTE, Consp. Av., i, 1850, 541.

[*Certhidea*] *olivacea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.

*Certhidea olivacea olivacea* ROTHSCCHILD and HARTERT, Novit. Zool., vi, Aug., 1899, 148 (James, Duncan, Albemarle, Jervis, Indefatigable, and Narborough islands).

*Certhidea salvini* RIDGWAY, Proc. U. S. Nat. Mus., xvii, no. 1007, Nov. 15, 1894, 358 (Indefatigable I.; coll. Dr. G. Baur); xix, 1897, 500 (monogr.).

*Certhidea albamareli* RIDGWAY, Proc. U. S. Nat. Mus., xvii, no. 1007, Nov. 15, 1894, 380 (Albemarle I., Galapagos, coll. Dr. G. Baur); xix, 1897, 500 (monogr.).

#### CERTHIDEA LUTEOLA Ridgway.

##### GRATEAN ISLAND CERTHIDEA.

Similar to *C. olivacea*, but upper parts brighter olive and under parts distinctly buff-yellowish (except in much abraded plumage); no rufescent color on throat, etc.;<sup>1</sup> bill frequently entirely black; wing, 52.1-52.8, tail, 35.6-37.6, exposed culmen, 10.2-10.9; tarsus,

— — — — —

tail-coverts, many of the feathers of top of head, hindneck, and back showing very indistinct tips of dusky, producing a very faintly mottled appearance; greater wing-coverts conspicuously edged and tipped with bright tawny; secondaries edged with tawny-olive; sides of head and neck, throat, and chest nearly uniform dull light grayish brown, mixed with pale dull buffy, the feathers dusky gray basally; sides and flanks similar but browner; median portion of under parts, posterior to chest, dull pale buffy, nearly white on lower belly and anal region.<sup>1</sup>

**Galapagos Archipelago (Chatham Island).**

*Certhidea olivacea* (part) GOULD, Zool. Voy. Beagle, iii, Birds, 1841, 106 (Chatham I., Galapagos Archipelago).—SALVIN, Trans. Zool. Soc. Lond., ix, pt. ix, 1876, 476, part (Chatham I.).—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 28 (Chatham I.).—RIDGWAY, Proc. U. S. Nat. Mus., xii, 1889, 105 (part), 121 (Chatham I.).

*Certhidea luteola* RIDGWAY, Proc. U. S. Nat. Mus., xvii, no. 1007, Nov. 15, 1894, 360 (Chatham I., Galapagos Archipelago; coll. Dr. G. Baur); xix, 1897, 501 (monogr.).

*Certhidea olivacea luteola* ROTHSCHILD and HARTERT, Novit. Zool., vi, Aug., 1899, 149 (Chatham I.; crit.).

**CERTHIDEA RIDGWAYI (Rothschild and Hartert).**

**CHARLES ISLAND CERTHIDEA.**

Similar to *C. olivacea*, but under parts much paler and less olivaceous; upper parts more grayish; rufous-cinnamon of throat more rusty; whitish tips to rectrices broader (1–1.5 mm. wide); bill usually deep black.

*Young*.—Above dusky blackish brown, the pileum almost uniform black, the feathers of the back and rump, and the upper tail-coverts broadly edged with light brown, narrowly margined at tips with black, and ash-gray at base; wings with light brown edgings, more rusty on the coverts; feathers of under parts ash gray basally, then dark slate color, their tips rusty buff; throat patched with blackish slate color, caused by the greater extent of the slaty color in the middle of the feathers.<sup>2</sup>

**Galapagos Archipelago (Charles Island).**

According to Messrs. Rothschild and Hartert, the color of the under parts in this form resembles that of *C. cinerascens*, “but is not so white, and the adult *males* have a red [*i. e.*, rusty] throat, which is apparently never assumed by *C. cinerascens*.”

*Certhidea olivacea ridgwayi* ROTHSCHILD and HARTERT, Novit. Zool., vi, Aug., 1899, 149 (Charles I., Galapagos Archipelago; coll. Tring Mus.).

<sup>1</sup> No. 115940, coll. U. S. Nat. Mus., Chatham Island (high hills), Apr. 5, 1888; C. H. Townsend.

<sup>2</sup> Description adapted from Rothschild and Hartert.

## CERTHIDEA MENTALIS Ridgway.

## TOWER ISLAND CERTHIDEA.

Similar to *C. fusca*, but rather smaller; color darker and less olivaceous, the under parts dull light olive-grayish becoming pale buffy on chin and under wing-coverts.

*Adult.* Above uniform deep grayish olive; chin, throat, and under wing-coverts pale buff, deepest on chin, that of throat changing gradually on chest to buffy gray, which covers whole chest, upper breast, sides, and flanks; belly dull whitish; under tail-coverts buffy white; an indistinct whitish supraloral streak; wing, 52.1; tail, 40.1; exposed culmen, 10.2; tarsus, 20.3.

Of the five specimens examined one has the mandible apparently black, one dark brown, the other three brownish white.

Galapagos Archipelago (Tower Island).

*Certhidea mentalis* RIDGWAY, Proc. U. S. Nat. Mus., xvii, no. 1007, Nov. 15, 1894, 359 (Tower I., Galapagos Archipelago, coll. Dr. G. Baur); xix, 1897, 504 (monogr.).

*Certhidea olivacea mentalis* ROTHCHILD and HARTERT, Novit. Zool., vi, Aug., 1899, 150 (Tower I.).

## CERTHIDEA FUSCA Sclater and Salvin.

## HABEL'S CERTHIDEA.

Similar to *C. olivacea*, but darker and less olivaceous above, the under parts buffy grayish white or very pale yellowish olive-gray; bill more dusky (wholly black in adult male); adult male without rufescent coloring on throat or superciliary region; wing, 50.8-52.3 (51.8); tail, 33-36.8 (35.6); exposed culmen, 10.7-11.4 (11.2); tarsus.

Another adult male (no. 116101, coll. U. S. Nat. Mus., obtained April 16) has the mandible distinctly light colored, except at tip, thus showing the color of the bill to be an inconstant feature in this as well as in some other species of the genus.

*Young*.—Above similar to adult, but rather browner, and feathers, especially on back, hindneck, and pileum, showing in certain lights very indistinct narrow terminal bars of dusky; beneath much as in adult, but sides of head and neck, throat, and chest more grayish; sides and flanks faintly mottled with light grayish brown, the flanks tinged with pale buffy.<sup>1</sup>

Galapagos Archipelago (Abingdon and Bindloe islands).

*Certhidea fusca* SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1870, 323, 324 (Abingdon and Bindloe islands, Galapagos Archipelago; coll. Salvin and Godman).—SALVIN, Trans. Zool. Soc. Lond., ix, pt. ix, 1876, 477.—SCLATER, Cat. Birds Brit. Mus., xi, 1886, 28.—RIDGWAY, Proc. U. S. Nat. Mus., xii, 1889, 105, 119, 123, 124, 126 (Abingdon Island); xix, 1897, 502 (monogr.).

[*Certhidea*] *fusca* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 16.

*Certhidea olivacea fusca* ROTHSCILD and HARTERT, Novit. Zool., vi, Aug., 1899, 151 (Abingdon and Bindloe islands).

#### CERTHIDEA BECKI Rothschild.

##### WENMAN ISLAND CERTHIDEA.

Similar to *C. fusca*, but darker, especially on sides and flanks; wing longer, (56, nearly 59 mm., in males, 52–54 mm. in females), but bill shorter (8–9 mm.); adult male sometimes with an ochraceous patch on throat, the adult female sometimes with the throat tinged with ochraceous. Differing from *C. olivacea* in being darker above, darker and browner on chest, flanks, and sides of breast, and in the adult males not having the throat rufous-cinnamon.<sup>2</sup>

Galapagos Archipelago (Wenman Island).

*Certhidea becki* ROTHSCILD, Bull. Brit. Orn. Club, no. liv, May 25, 1898, p. liii (Wenman Island, Galapagos Archipelago; coll. Tring Mus.).

*Certhidea olivacea becki* ROTHSCILD and HARTERT, Novit. Zool., vi, Aug., 1899, 149 (crit.).

#### CERTHIDEA DROWNEI Rothschild.

##### CULPEPPER ISLAND CERTHIDEA.

Similar to *C. becki*, but larger (wing, 62 mm., in adult male, 57 mm., in adult female); sides of breast darker, more olivaceous; pileum darker; length of bill from nostril to tip of maxilla, 8–9 mm.<sup>3</sup>

Galapagos Archipelago (Culpepper Island).

*Certhidea drownei* ROTHSCILD, Bull. Brit. Orn. Club, no. liv, May 25, 1898, p. liii (Culpepper Island, Galapagos Archipelago; coll. Tring Mus.).

*Certhidea olivacea drownei* ROTHSCILD and HARTERT, Novit. Zool., vi, Aug., 1899, 150 (crit.).

<sup>1</sup> No. 116103, coll. U. S. Nat. Mus.

<sup>2</sup> Description adapted from Rothschild and Hartert.

<sup>3</sup> Diagnosis adapted from Rothschild and Hartert.

## CERTHIDEA CINERASCENS Ridgway.

## GRAY CERTHIDEA.

Similar to *C. fusca*, but much grayer above and whiter beneath, and bill smaller (length from nostril to tip of maxilla not exceeding 8.5).

*Adult male*. --Above plain dull brownish gray, beneath wholly dull grayish white, faintly tinged with buffy, especially along sides; bill black, basal half of mandible horn color; legs and feet black; length (skin), 97.8; wing, 50.8; tail, 35.6; exposed culmen, 9.4; bill from rictus, 11.4; tarsus, 18.5; middle toe, 10.9.<sup>1</sup>

Galapagos Archipelago (Hood Island and Gardner Island, near Hood Island).

*Certhidea cinerascens* RIDGWAY, Proc. U. S. Nat. Mus., xii, no. 767, Feb. 5, 1890, 105, 119, 127 (Hood I., Galapagos Archipelago; coll. U. S. Nat. Mus.); xix, 1897, 503 (monogr.).

*Certhidea cinerascens cinerascens* ROTHSCHILD and HARTERT, Novit. Zool., vi, Aug., 1899, 151 (Hood I. and Gardner I., near Hood).

*Certhidia cinerascens* BAUD, Am. Nat., xxxi, 1897, 783 (Gardner I., near Hood).

*Certhidea olivascens (laspus penna)* RIDGWAY, Proc. U. S. Nat. Mus., xii, 1890, 124 (Hood I.).

## CERTHIDEA BIFASCIATA Ridgway.

## BARRINGTON ISLAND CERTHIDEA.

Similar to *C. cinerascens*, but still whiter (entirely almost pure white) beneath, and wing with two broad whitish bands across tips of greater and middle coverts.

*Adult*. --Above brownish gray, becoming very much paler on the



## Genus RHODINOCICHLA Hartlaub.

*Rhodinocichla* HARTLAUB, Journ. für Orn., i, Jan., 1853, 33. (Type, *Furnarius roseus* Lesson.)

*Rhodinocinclæ* (lapsus<sup>1</sup>) REICHENBACH, Handb. Spec. Orn., no. x, Scansoriæ (Sitinae), Aug. 1, 1853, 148, 201.

*Rhodocinclæ* (emendation) SUNDEVALL, Av. Meth. Tent., 1872, 13.

*Cichlalopia* BONAPARTE, Compt. Rend., xxxviii, 1854, 6. (Type, *Turdus vulpinus* Hartlaub, = *Furnarius roseus* Lesson.)

Very large Mniotiltidæ(?) with bill nearly as long as head, stout (depth at nostrils equal to nearly half the distance from nostril to tip of maxilla), distinctly notched; nostril nearly circular, with very slight superior membrane; rictal bristles obsolete; middle toe with claw nearly equal to tarsus; wing excessively rounded, the outermost (ninth) primary much shorter than secondaries, the eighth shorter, or at least not longer, than first, the seventh, sixth, fifth, and fourth longest and nearly equal; tail about equal to wing, much rounded; upper parts, sides, and flanks plain sooty blackish or slate color; superciliary stripe and median under parts rose red in adult males, tawny in adult females.

Bill nearly as long as head, moderately compressed, rather stout; culmen straight for basal half (approximately) then gradually decurved to the distinctly but not abruptly uncinate tip, distinctly but not sharply ridged basally; maxillary tomium nearly straight for most of its length, distinctly notched subterminally; gonys very faintly convex. Nostril circular, in anterior end of nasal fossæ, without superior operculum or membrane, except posteriorly. Rictal bristles obsolete. Wing short, excessively rounded; outermost (ninth) primary much shorter than secondaries; eighth shorter (or at least not longer) than first, the seventh, sixth, fifth, and fourth longest and nearly equal; wing-tip about half as long as exposed culmen. Tail about as long as wing, much rounded, the rectrices very broad, with rounded tips. Tarsus about one-third as long as wing, stout, its scutella indistinct on outer side; middle toe, with claw, nearly as long as tarsus; lateral toes equal, their claws falling short of base of middle claw; hallux about as long as lateral toes, slender, its claw much shorter than the digit; basal phalanx of middle toe united for most of its length to outer toe, for about half its length to inner toe.

*Coloration*.—Upper parts, sides of head, sides, and flanks plain sooty blackish or slate color; superciliary stripe, malar region, and under parts (except laterally) rose red in adult males, tawny in females; young said to have the under parts mottled.<sup>2</sup>

*Nidification*.—Unknown.

<sup>1</sup> Evidently a slip of the memory, or the pen, since Hartlaub is cited, as above, as authority for the name.

<sup>2</sup> Salvin and Godman, Biol. Centr.-Am., Aves, i, 38

*Range*.—Western Mexico; Costa Rica to Colombia and Venezuela. (Two species.)

Although this genus, first placed in the Furnariidæ, but usually referred to either the Mimidæ or Troglodytidæ, is very aberrant as a member of the Mniotiltidæ, I do not know where else to place it. It quite certainly does not belong to the first-named family, being unquestionably an oscine bird; nor can it belong to either of the other two, which are both "ten-primaried" groups, while *Rhodinocichla* is "nine-primaried," the tenth primary being very minute and entirely concealed.

KEY TO THE SPECIES AND SUBSPECIES OF RHODINOCICHLA.

- a. Superciliary stripe, throat, breast, etc., rose red. (Adult males.)
  - b. Smaller (wing 81, tail 78, depth of bill at nostrils 5.5).<sup>1</sup> (Venezuela; Colombia.)  
*Rhodinocichla rosea rosea*, adult male (extralimital<sup>2</sup>)
  - bb. Larger (wing 83-90, tail 82-93, depth of bill at nostrils 6.5-7).
    - c. Upper parts slate-black; flanks dark slate color; wing and tail shorter, feet larger (wing averaging 85.6, tail 85.7, tarsus 27.3, middle toe 19.5). (Isthmus of Panama to southern Costa Rica.)  
*Rhodinocichla rosea eximia*, adult male (p. 770)
    - cc. Upper parts slate color; flanks slate-gray; wing and tail longer, feet smaller (wing averaging 88.3, tail 89.3, tarsus 25.4, middle toe 18.1). (Western Mexico.).....*Rhodinocichla schistacea*, adult male (p. 772)
- aa. Superciliary stripe, throat, breast, etc., tawny. (Adult females.)
  - b. Smaller, with larger feet (wing 77-82.5, tail 78-84, tarsus 26-28).
    - c. Bill more slender (depth at nostrils 5.8); upper parts slate color, flanks slate-gray.....*Rhodinocichla rosea rosea*, adult female (extralimital)
    - cc. Bill stouter (depth at nostril 6-7, averaging 6.7); upper parts slate-black, flanks slate color.....*Rhodinocichla rosea eximia*, adult female (p. 771)



stripe of clear rose red, broadest over lores, where encroaching on sides of forehead, becoming much narrower from above the eye backward, the supra-auricular portion white or pale rose pink; lower half of lores, suborbital region, auricular region, and sides of neck uniform slate-black; malar region, chin, throat, chest, abdomen, under tail-coverts, anterior lesser wing-coverts, and marginal under wing-coverts clear rose red (the feathers grayish dusky basally); sides, flanks, and thighs dark slate color or nearly slate-black; under wing-coverts (except those along edge of wing) pale gray centrally, broadly margined with white; maxilla dark horn color basally, pale brownish or whitish terminally (sometimes for more than terminal half) and along tomia; mandible pale yellowish brown or whitish; length (skins), 190–201 (194.7); wing, 83–88 (85.6); tail, 81–89 (85.7); exposed culmen, 19.5–21.8 (20.6); depth of bill at nostrils, 6.5–7 (6.8); tarsus, 26–28.5 (27.3); middle toe, 18.5–21 (19.5).<sup>1</sup>

*Adult female*.—Pattern of coloration exactly as in adult male, but the rose red replaced by clear, rich tawny, the lower abdomen more or less extensively white, and the slate-black of upper parts slightly more slaty, the flanks decidedly so; length (skins), 180–190 (185.5); wing, 77–82.5 (80); tail, 77–84 (79.8); exposed culmen, 19–21.5 (19.8); depth of bill at nostrils, 6–7 (6.7); tarsus, 26–28 (26.8); middle toe, 18–19.5 (19).<sup>1</sup>

*Immature male*.—Similar to the adult female, but superciliary stripe red, instead of tawny, anteriorly, chin, throat, and malar region strongly tinged with red (especially the latter), and tawny of under parts much more restricted, and darker, slightly tinged with red on breast.

*Immature female*.—Similar to the adult female, but greater wing-coverts margined terminally with tawny and tawny supraloral space narrower and less sharply defined.

*Young in first plumage*.—"All over blackish, with a few rufous edges to the wing-coverts; underneath mottled like a young blackbird,<sup>2</sup> the features sandy buff, with broad black edges; the center of the abdomen somewhat whiter; over the eye a broad streak of white."<sup>3</sup>

Isthmus of Panama and north to southern Costa Rica.

*Rhodinocichla rosea* (not of Sclater, 1855, <sup>4</sup>not *Furnarius roseus* Lesson) SCLATER, Proc. Zool. Soc. Lond., 1856, 140 (David, Chiriqui).—LAWRENCE, Ann. Lyc. N. Y., vii, 1861, 292 (Lion Hill, Panama R. R.); ix, 1868, 92 (Costa Rica).—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, 345 (Lion Hill).—BAIRD, Review Am. Birds, 1864, 91, footnote, part (Panama R. R.).—SALVIN, Proc. Zool. Soc. Lond., 1867, 133 (Santa Fé, Veragua, and David, Chiriqui; crit.); 1870, 180 (Calovevora, Chitra, and Mina de Chorchá, Veragua).—FRANTZIUS, Journ. für Orn., 1869, 291 (Costa Rica).—SALVIN and GODMAN,

<sup>1</sup> Ten specimens.

<sup>2</sup> *Merula merula* (Linnæus).

<sup>3</sup> Sharpe, Cat. Birds Brit. Mus., vi, 1881, 367.

<sup>4</sup> Proc. Zool. Soc. Lond., 1855, 141 (Bogotá, Colombia); = *R. rosea rosea* (

Biol. Centr.-Am., Aves, i, 1879, 38, part (Costa Rica; David; Volcan de Chiriqui; Mina de Chorchá; Chitira; Calovevora; Santa Fé; Lion Hill).—SHARPE, Cat. Birds Brit. Mus., vi, 1881, 386, part (Costa Rica; Veragua).—RIDGWAY, Proc. U. S. Nat. Mus., xvi, 1893, 609 (Buenos Aires, s. w. Costa Rica; crit.).—CHERRIE, Expl. Zool. Costa Rica, i, Aves, 1893, 4 (Buenos Aires, Costa Rica; descr. male and female).—BANGS, Auk, xviii, 1901, 368 (Divala, Chiriqui); Proc. New Engl. Zool. Club, iii, 1902, 60 (Boquete, 3,000 to 3,500 ft., and Bogaba, Chiriqui).

[*Rhodinocichla*] *rosea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 3, part.

[*Rhodinocichla rosea*] *α. rosea* RIDGWAY, Proc. U. S. Nat. Mus., i, Dec. 10, 1878, 247 (diagnosis).

### RHODINOCICHLA SCHISTACEA Ridgway.

#### MEXICAN THRUSH-WARBLE.

Similar to *R. r. eximia*, but with black of upper parts replaced by slate color, that of the flanks by slate-gray; wing and tail decidedly longer, feet smaller.

*Adult male*.—Upper parts, including sides of neck, plain slate color, the feathers with slightly darker centers, especially the scapulars, interscapulars, and upper tail-coverts; wings and tail darker, the former with distinct edgings of paler slate color or slate-gray, these most conspicuous on middle and greater coverts; a superciliary stripe of pure rose red, becoming whitish or pale rose pink posteriorly (above auricular region), broadest anteriorly, where encroaching on sides of forehead; loreal, suborbital, and auricular regions deep slate color; sides and flanks and thighs plain grayish slate or slate-gray, paler on flanks; malar region, chin, throat, breast, abdomen, and carpal region, clear rose red, most intense anteriorly, the feathers dusky

- Rhodinocichla rosea* (not *Furnarius roseus* Lesson) FINSCH, Abh. Nat. Ver. Brem., 1870, 329 (Mazatlan).—LAWRENCE, Mem. Bost. Soc. N. H., ii, 1874, 267 (Mazatlan; Sierra Madre, Colima, habits; song).—SALVIN and GODMAN, Biol. Centr.-Am., Aves, i, 1879, 38, part (Mazatlan; Sierra Madre de Colima).—SHARPE, Cat. Birds Brit. Mus., vi, 1881, 366, part (in synonymy).  
[*Rhodinocichla*] *rosea* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 3, part.  
*Rhodinocichla rosea*,  $\beta$ . *schistacea*, RIDGWAY, Proc. U. S. Nat. Mus., i, Dec. 10 1878, 247 (Sierra Madre, Colima, s. w. Mexico; coll. U. S. Nat. Mus.).  
*Rhodinocichla schistacea* SHARPE, Cat. Birds Brit. Mus., vi, 1881, 367.



## ADDENDA.

(Including corrections.)

Page 8: To citations of *Chlorophonia callophrys* add:

SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1889, 3 (Chiriqui).—BANGS, Proc. New Engl. Zool. Club, iii, 1902, 64 (Volcan de Chiriqui, 4,000 to 7,500 ft., and Boquete, Chiriqui).

Page 27: To citations of *Euphonia hirundinacea* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 64 (Boquete, Chiriqui, 3,800 to 4,000 ft.), and remove interrogation point after Chiriqui, in statement of geographic range.

Page 29: To citations of *Euphonia lanirostris* add:

SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 3 (Punta de Sabana, Isthmus of Panama).

Page 33: Add:

### KEY TO THE SPECIES OF BUTHRAUPIS.

a. Sides and flanks yellow, mottled or blotched with dusky. (Veragua.)

*Buthraupis arcæi*, adult male (p. 33)

aa. Sides and flanks, very broadly, uniform dusky blue, like upper parts. (Costa Rica.) ..... *Buthraupis cæruleigularis*, adult male (p. 34)

Page 40: To citations of *Calospiza florida arcæi* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 64 (Caribbean slope of Volcan de Chiriqui, 2,000 ft.).

Page 42: To citations of *Calliste guttata* add:

SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 3 (Chiriqui).

Page 42: For *Calospiza cubanisi* Sclater read: *Calospiza cabanisi* (Sclater).

Page 46:

### CALOSPIZA LAVINIA (Cassin).

*Immature*.—Plain glossy green, including head and neck, the under parts paler; abdomen light turquoise blue, or mixed with that color; primaries edged with green, this having a slight brownish tinge basally on the outermost quills. (Very similar to the corresponding plumage of *C. gyroloides*, but the coloration brighter, especially the green of the under parts.)

Page 47: To citations of *Calliste doni* add:

SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 3 (Chiriqui).

Page 57: To citations of *Tanagra cana* add:

BOCCARD, Liste Ois. Guat., 1878, 33.

Page 58: To citations of *Tanagra cana diaconus* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 65 (Boquete, 3,000 to 4,000 ft., and Bogaba, Chiriqui).

Page 62: To citations of *Tanagra abbas* add:

BOCCARD, Liste Ois. Guat., 1878, 33.

Page 62: To synonymy of *Spindalis* add:

*Shizampelis* (typographical error) BRYANT, Proc. Bost. Soc. N. H., xi, 1866 (pub. May, 1867), 92.

Page 77: The synonymy of *Piranga rubriceps*, accidentally omitted, is as follows:

- P[iranga] rubriceps* GRAY, Gen. Birds, ii, 1844, 364, pl. 89, lower fig. (No description nor locality given.)—BAIRD, BREWER, and RIDGWAY, Hist. N. Am. Birds, i, 1874, 433.

*Piranga rubriceps* BONAPARTE, Rev. et Mag. de Zool., iii, 1851, 178; Note sur les Tang., 1851, 29.—SCLATER, Proc. Zool. Soc. Lond., 1855, 156 (Bogota); 1856, 125 (monogr.); Synopsis Av. Tanagr., 1856, 49; Cat. Am. Birds, 1862, 81 (Colombia); Cat. Birds Brit. Mus., xi, 1886, 192.—SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1879, 502 (Antioquia, Colombia).—TACZANOWSKI, Proc. Zool. Soc. Lond., 1880, 115 (n. Peru); Orn. du Pérou, ii, 1884, 496.—TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, 81 (Baños, e. Ecuador, 6,200 ft.).—BRYANT (W. E.), Auk, iv, 1887, 78 (Dos Pueblos, Santa Barbara Co., California, 1 spec., "about 1871").

[*Piranga*] *rubriceps* SCLATER and SALVIN, Nom. Av. Neotr., 1873, 22.

[*Piranga*] *rubriceps* RIDGWAY, Man. N. Am. Birds, 1887, 569 (Dos Pueblos, Santa Barbara Co., California; description)

*Piranga rubriceps* (Linn.) Swainson, Cat. Birds, 1827, 182 (Linn.)

Page 94: To citations of *Piranga ludoviciana* add:

BOWLES, Condor, iv, 1902, 16 (Washington and Oregon; habits; descr. nest and eggs).

Page 96: To synonymy of *Piranga bidentata flammea* add:

*Piranga bidentata flammea* NELSON, North Am. Fauna, no. 14, 1899, 53 (Tres Marias; habits; song; crit.).

Page 98: To synonymy of *Piranga bidentata sanguinolenta* add:

*Piranga bidentata sanguinolenta* BANGS, Proc. New Engl. Zool. Club, iii, Jan. 30, 1902, 66 (Volcan de Chiriqui, 4,000 to 7,000 ft., and Boquete, Chiriqui).

Page 101: To citations of *Piranga leucoptera latifasciata* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 66 (Boquete, Chiriqui, 4,000 to 5,000 ft.).

Page 106, fourth paragraph, in text: For *Hemispingus* read *Hemithraupis*.

Page 111: To citations of *Rhamphocelus passerinii* add:

SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 4 (Chiriqui).

Page 111:

#### RAMPHOCELUS COSTARICENSIS Cherrie.

Seven adult males, three immature males, and three adult females from Divala and Bogaba, Chiriqui, just received from Mr. Outram Bangs—all of them beautifully prepared specimens—enable me to give a better diagnosis of this form:

Similar to *R. p. passerinii*, but slightly larger; adult female and immature male with a broad and conspicuous band of ochraceous-orange or dull reddish orange across the chest, and with the rump olivaceous-orange deepening into a more reddish or ochraceous-orange hue on upper tail-coverts.

*Adult male* (seven specimens).—Length (skins), 159–165 (162.6); wing, 76.5–81 (78.6); tail, 68–72 (70.1); exposed culmen, 14–15 (14.3); tarsus, 21–23 (22.1).

*Adult female* (three specimens).—Length (skins), 160–167 (163); wing, 76–78 (77); tail, 70.5–72 (71.2); exposed culmen, 14–16 (15); tarsus, 22–23 (22.5).

Southwestern Costa Rica (Pozo Azul; Boruca; Palmar; Buenos Aires; Navarro) and Chiriqui (Bogaba; Divala).

The form is without doubt a subspecies of *R. passerinii*, and should be called *Ramphocelus passerinii costaricensis* (Cherrie).

Page 115: To synonymy of *Ramphocelus festæ* add:

*Rhamphocelus festæ* SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 4 (Chiriqui).

Page 117: To citations of *Ramphocelus dimidiatus* add:

BANGS, Auk., xviii, 1901, 369 (Divala and David, Chiriqui; crit.).

Page 118: To citations of *Rhamphocelus dimidiatus*, in synonymy of *Ramphocelus dimidiatus isthmicus*, add:

(?) SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 4 (Punta de Sabana, Isthmus of Panama).

Page 119: For *Ramphocelus dimidiatus limatus* Bangs read *Ramphocelus dimidiatus limatus* (Bangs).

Page 120: For *Phlogothraupis sanguinolenta* read *Phlogothraupis sanguinolenta*.

Page 123: In statement of range of *Lanio aurantius* for Oaxaca read Chiapas.

Page 132: To citations of *Tachyphonus melaleucus* add:

SALVADORI and FESTA, Boll. Mus. Zool., etc., Torino, xiv, no. 399, 1899, 4 (Colon, Isthmus of Panama).

Page 141: For *Eucometis spodocephala stictothorax* (Berlepsch) read *Eucometis spodocephala stictothorax* Berlepsch, and add to the synonymy:

*Eucometis* [sic] *spodocephala stictothorax* BANGS, Proc. New Engl. Zool. Club, iii, 1902, 66 (Boquete, 4,000 to 4,800 ft., and Bogaba, Chiriqui).

Page 146: For *Phænicothraupis vinacea* read *Phænicothraupis vinacea*; for *Phœnicothraupis vinacea* read *Phænicothraupis vinacea*, and add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 66 (Volcan de Chiriqui, 4,000 to 7,500 ft., and Boquete, Chiriqui).

Page 148: In statement of range of *Phænicothraupis salvini salvini* read for locality: (undated) from Oaxaca to Chiapas.



*ralis* pertaining to South American localities (excepting Colombia?), and add to synonymy:

*Chlorospingus novicius* BANGS, Proc. New Engl. Zool. Club, iii, Jan. 30, 1902, 67 (Volcan de Chiriqui, 7,500 ft.; coll. E. A. and O. Bangs).

Page 166: To citations of *Chlorospingus pileatus* add:

BANGS, Proc. New Engl. Zool. Club., iii, 1902, 67 (Volcan de Chiriqui and Boquete, Chiriqui, 5,000 to 11,000 ft.).

Page 167: To citations of *Chlorospingus hypophæus* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 67 (Caribbean slope of Volcan de Chiriqui).

Page 189: To synonymy of *Cacicus vitellinus* add:

*Cacicus vitellinus* BANGS, Proc. New Engl. Zool. Club, iii, Jan. 30, 1902, 64 (Sona, Chiriqui).

Page 207: In first paragraph, in text, for *Agelaioides* read *Agelaioides*.

Page 209: After *Molobrus pecoris*, in synonymy, add:

*Cassicus pecoris* GISTEL, Handb. Naturg., 1850, 288, in text.

Page 211: For *Molothrus atronitens* (Cabanis) read *Molothrus atro-nitens* Cabanis.

Page 219: For *Quiscalus quiscula æneus* Ridgway read *Quiscalus quiscula æneus* (Ridgway).

Page 222: To citations of *Quiscalus quiscula æneus* add:

MORRELL, Auk, xvi, 1899, 252 (Cumberland Co., Nova Scotia).—CARROLL, Auk, xvii, 1900, 346 (Refugio Co., s. Texas, breeding).

Page 227: To synonymy of *Holoquiscalus jamaicensis* add:

[*Oriolus*] *niger* (not of Boidaert, 1783) GMELIN, Syst. Nat., i, pt. i., 1788, 393, part (based on *Icterus niger* Brisson, Orn., ii, 103, etc.; Jamaica).

Page 228: To synonymy of *Holoquiscalus niger* add:

[*Oriolus*] *niger* GMELIN, Syst. Nat. i, pt. i, 1788, 393 (based on *Icterus niger* Brisson, Orn., ii, 103, etc.)

Page 253: In synonymy of genus *Dives* Cassin, for *Lampropsar dives* Bonaparte read *Icterus dives* Lichtenstein.

Page 277: To citations of *Icterus spurius* add:

TRIPPE, Proc. Bost. Soc. N. H., xv, 1872, 239 (Decatur and Mahaska counties, s. Iowa, breeding).—ALLEN, Bull. Am. Mus., N. H., i, 1886, 249 (Massachusetts, chiefly in Connecticut Valley).

Page 291: To citations of *Icterus cucullatus nelsoni* add:

BELDING, Land Birds Pacific Distr., 1890, 125 (San Diego, San Bernardino, and Ventura counties, California, breeding).

Page 295: In citation of *Xanthornus chrysater* BONAPARTE, Consp. Av., etc., the generic name (except initial letter) should be bracketed.

Page 297:

**ICTERUS SCLATERI** Cassin.

*Immature*.—Wings dusky grayish, with white markings less sharply defined than in adults, the lesser coverts dusky margined with yellowish; tail yellowish olive, the lateral rectrices more yellowish; otherwise similar to adults, but the yellow duller, that of the upper parts more or less obscured by a wash of olive, especially on back and upper rump.

Page 298:

**ICTERUS GRAYSONII** Cassin.

*Immature male*.—Similar to the adult female, but slightly larger.

Page 299:

**ICTERUS AURATUS** Bonaparte

*Immature*.—Wings grayish dusky, with white markings as in adults, but lesser coverts dusky instead of yellow or orange; tail yellowish olive, more yellowish on lateral rectrices, more grayish on terminal portion of middle rectrices; otherwise like adults, but hindneck, back, scapulars, and upper rump yellowish olive instead of orange or orange-yellow.

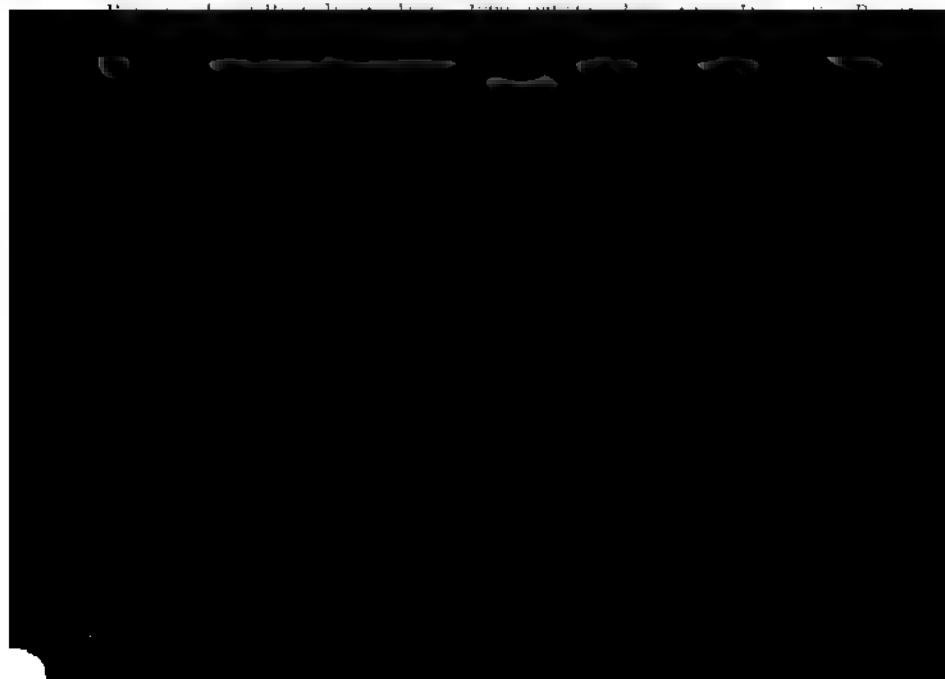
Page 305: For St. Andrew's Oriole read St. Andrews Oriole.

Page 310: To citations of *Icterus parisorum* add:

BELDING, Land Birds Pacific Distr., 1890, 125 (Campo, etc., Lower California).

Page 313: To citation of *Icterus baltimore* ALLEN, Bull. Mus. Comp. Zool., iii, 1872, add p. 136 (Fort Hays, w. Kansas; crit.).

Page 326: To citations of *Agelaius tricolor* add:



Page 342: To citations of *Agelaius phoeniceus*, in synonymy of *Agelaius phoeniceus caurinus*, add:

BELDING, Land Birds Pacific Distr., 1890, 120, part (British Columbia; Seattle, Washington).

Page 349: To citations of *Xanthocephalus xanthocephalus* add:

ALLEN, Bull. Am. Mus. N. H., i, 1886, 249 (Watertown, Massachusetts, 1 spec., Oct. 19, 1869.; Eastham, Massachusetts, 1 spec., Sept. 10, 1877).

Page 353: To citations of *Leistes guianensis* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 64 (David, Chiriqui).

Page 359: For TRIPPE, Proc. Bost. Soc. N. H., xi, 1872, 239 (Iowa) read TRIPPE, Proc. Bost. Soc. N. H., xv, 1872, 239 (Decatur and Mahaska counties, Iowa, breeding; migrant.)

Page 365: To citation of *Sturnella magna inexpectata* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 64 (Boquete, Chiriqui, 4,000 to 6,000 ft.).

Page 368: In synonymy of *Sturnella neglecta*, for *Sturnella hippocrepus* read *Sturnella hippocrepis*.

Page 373: To citations of *Dolichonyx oryzivorus* add:

FISHER (W. K.), Condor, iv, 1902, 11 (Mono Lake, California, Sept.).

Page 382: To citations of *Diglossa plumbea* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 63 (Boquete, Chiriqui, 4,500 to 7,000 ft.).

Page 385: For *C[æreba] cærulea* read *Cæreba cærulea*.

Page 389: To citation of *Cyanerpes cyaneus carneipes* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 63 (Boquete, Chiriqui, 3,000 to 5,000 ft.).

Page 397: To citations of *Dacnis venusta* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 63 (Boquete, Chiriqui, 4,000 to 5,000 ft.).

Pages 403-422: Sundeval's review of the genus *Certhiola* [*Cæreba*] has been wrongly cited, the correct citations being as follows:

Page 403: *C[erthiola] bairdii* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 621 (monogr.). *C[erthiola] bahamensis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 624 (monogr.).

Page 407: *C[erthiola] luteola* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 621 (monogr.).

Page 408: *C[erthiola] major* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 622 (monogr.). *C[erthiola] minor* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 622 (monogr.).

Page 410. *C[erthiola] mexicana* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 622, 623 (monogr.).

Page 411: *C[erthiola] columbiana* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 622 (monogr.).

Page 413: *C[erthiola] portoricensis* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 598, 622 (monogr.).

Page 414: *C[erthiola] sti. thomæ* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 621 (monogr.; St. Thomas).

Page 415: *C[erthiola] flaveola* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 621, part (monogr.). (The same in synonymy of *Cereba neotomi*, on p. 417.)

Page 418: *C[erthiola] dominicana* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 623 (monogr.).

Page 419: *Certhiola bartholemica* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 584 (St. Bartholomew). *C[erthiola] bartholemica* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 622 (monogr.).

Page 422: Cancel citation of SUNDEVALL, Öfv., etc., under *Certhiola martinicana*, and change citation after *Certhiola albigula* to *C[erthiola] albigula* SUNDEVALL, Öfv. k. Vet.-Ak. Förh. Stockh., xxvi, 1870, 624 (monogr.).

Page 407: To citations of *Cereba luteola* add:

ROBINSON and RICHMOND, Proc. U. S. Nat. Mus., xxiv, 1901, 176 (La Guaira, Venezuela).

Page 410: To synonymy of *Cereba mexicana* add:

*Cerebra mexicana* CHERRIE, Expl. Zool. Costa Rica, i, Aves, 1893, 18 (Boruca, Térraba, and Buenos Aires, s. w. Costa Rica).

Page 413: To citations of *Cereba portoricensis* add:

PRATT, Auk., xvi, 1899, 361 (nesting, etc.).

Page 425: For *G[lossiptila] ruficollis* NEWTON, etc., read *G[lossoptila] ruficollis* NEWTON, etc.

Page 435: To citations of *Mniotilta varia* add:

BLAND, Ann. Rep. Smithson. Inst. for 1859 (1860), 287 (Bermudas).—McILWRAITH, Birds Ontario, 1894, 353 (s. Ontario, breeding).—DANIEL, Auk, xix, 1902, 17 (Dismal Swamp, Virginia, breeding).

Page 437: To winter range of *Helinaia swainsonii* add, after Jamaica: eastern Mexico (near city of Vera Cruz).

Page 438: To citations of *Helinaia swainsoni* add:

SALVIN and GOODMAN, Ibis, 1889, 236 (Vera Cruz, Vera Cruz).

Page 444: To citations of *Protonotaria citrea* add:

BUTLER, Proc. Ind. Ac. Sci., 1891, 165 (breeding in Elkhart, Lagrange, Steuben, and Dekalb counties, n. Indiana, and St. Joseph Co., s. Michigan).

Page 462: For *Sylvia tenenssæi* read *S[ylvia] tenenssæi*.

Page 465: To citations of *Helminthophila celata* add:

DURY and KELLOGG, Journ. Cinc. Soc. N. H., xiv, 1891, 43 (near Cincinnati, Ohio, Sept. 20).

Page 468: In statement of geographic range of *Helminthophila celata sordida*, after last word, within parentheses, add: and San Gabriel, Los Angeles County, October 5.

Page 477: To citations of *Oreothlypis gutturalis* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 63 (Volcan de Chiriqui, 7,000 to 10,300 ft., and Boquete, Chiriqui).

Page 483: To doubtful citations of *Sylvicola americana* add:

BLAND, Ann. Rep. Smithson. Inst. for 1859 (1860), 287 (Bermuda).

Page 484: From doubtful citations of *Compsothlypis americana* remove last two references and transfer to page 483, after BREWSTER, Auk, xiii, etc. These were accidentally put in wrong place.

Page 486: The range of *Compsothlypis americana ramalinæ* was accidentally omitted. It is as follows: Mississippi Valley and district of the upper Great Lakes; breeding from Louisiana and Texas to Michigan, Wisconsin, and Minnesota; occasional west to eastern Colorado (El Paso County); in winter southward through eastern Mexico and Central America to Nicaragua (Rio Escondido).

Page 488: To citation of *Compsothlypis pitiauyumi speciosa* add:

BANGS, Proc. New Engl. Zool. Club, iii, 1902, 63 (Boquete, Chiriqui, 3,000 to 4,500 ft.).

Page 522: To citation after *Dendroica aureola* of RIDGWAY, Proc. U. S. Nat. Mus., etc., add: xix, 1897, 493 (monogr.).

Page 530: After *Dendræca bryanti* SHARPE, etc., add:

SALVIN and GODMAN, Ibis, 1889, 237 (Tampico, Tamaulipas).

Page 539: To citations of *Dendroica tigrina* add:

Howe, Contr. N. Am. Orn., ii, 1902, 19 (Mount Killington, Vermont, breeding).

Page 543: Cancel the following citations under *Dendroica canadensis* and transfer them to *Wilsonia canadensis* (p. 718): TACZANOWSKI, Proc. Zool. Soc. Lond., 1874, 508 (centr. Peru); 1879, 223 (Tambillo, n. Peru).

Page 549: For *Mniotilta varia* REINHARDT, etc., read *Mniotilta coronata* REINHARDT, etc.

Page 550: To citations of *Dendroica coronata* add:

Howe, Contr. N. Am. Orn., ii, 1902, 20 (Mount Mansfield, Vermont, breeding).

Page 550: For *Dendroica coronatus* GUNDLACH, etc., read [(*Rhinamphus*) *Dendroica*] *coronatus*, etc. (The same form to be substituted wherever "Gundlach, Journ. für Orn., 1861, 326" is cited for any species of this genus.)

Page 561: For *Dendroica townsendi* read *Dendroica townsendi*.

Page 562: For [*Dendroica*] *townsendi* COLES, Key N. Am. Birds, 2d ed., etc., read [*Dendroica*], etc.

Page 562: To synonymy of *Dendroica townsendi* add:

\*) *Sylvia montana* (not of Wilson) AUDUBON, Orn. Biog., v, 1839, 294, part, pl. 434, fig. 3 (California).

\*) *Sylvicola montana* AUDUBON, Synopses, 1839, 62, part (California): Birds Am., oct. ed., ii, 1841, 69, part, pl. 98 (California).

\*) [*Sylvicola*] *montana* BONAPARTE, Consp. Av., i, 1850, 308, part.

(\*) [*Mniotilta*] *montana* GRAY, Gen. Birds, i, 1848, 169, part.

(\*) [*Mniotilta*] *montana* GRAY, Hand-list, i, 1869, 241, no. 3490, part.

\*) *Dendroica montana* BAIRD, Review Am. Birds, 1865, 190, part.—BAIRD, Trans. Acad. Sci. St. Louis, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 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(?) *Dendroeca montana* SUNDEVALL, Öfv. k. Vet.-Akad. Förh., Stockholm, xxvi., 1870, 613.

(?) *Dendræca montana* COUES, Birds Col. Val., 1878, 237, footnote, part.—MAYNARD, Birds E. U. S., 1882, 521.—RIDGWAY, Nom. N. Am. Birds, 1881, no. 112.—SHARPE, Cat. Birds Brit. Mus., x, 1885, 265, footnote.

(?) *Sylvia tigrina* (not *Motacilla tigrina* Gmelin) NUTTALL, Man. Orn. U. S. and Can., i, 1832, 393.

(?) *Sylvicola tigrina* BONAPARTE, Geog. and Comp. List, 1838, 23.

Page 571: For *Sylvia cærlea* read *Sylvia cærulea*.

Page 594: In citations of *Dendræca castanea* cancel LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Tehuantepec city, Oct.), and transfer to synonymy *D. striata* on p. 598.

Page 598: To synonymy of *Dendroica striata* add:

*Dendræca castanea* (not *Sylvia castanea* Wilson) LAWRENCE, Bull. U. S. Nat. Mus., no. 4, 1876, 15 (Tehuantepec City, Oct.).

Page 602: To synonymy of *Dendroica vigorsii vigorsii* add:

*Dendræca vigorsii* HOWE, Contr. N. Am. Orn., ii, 1902, 20 (Townshend, etc., Vermont, breeding).

Pages 642, 643: To breeding range of *Sciurus noveboracensis noveboracensis* add: Warren, Crawford, Clinton, and Erie counties, Pennsylvania, and Garrett County, Maryland.

Page 703: To the synonymy of *Wilsonia* add:

*Myiidiocetes* (emendation) SCLATER, Proc. Zool. Soc. Lond., 1858, 299, 358.

Page 710: Description of the immature plumage of *Wilsonia pusilla pusilla* was accidentally omitted. This plumage differs from the adult as follows:

*Immature*: Similar to adults, but no black on crown; pileum plain olive-green, concolor with back, etc., becoming more yellowish (sometimes decidedly, but never purely, yellow) on forehead, the lores and superciliary region yellow.

The corresponding plumage of the other subspecies of course differs from that of the adults in the same manner.

Page 733: In last citation in synonymy of *Myioborus miniatus miniatus*, for *Muscicapa derhamii* read *Muscicapa de-rhamii*.

#### NOTE.

Throughout Part I of the present work and the greater part of Part II an error has been made in the spelling of the locality "Lometa" in citations of "SENNETT, Bull. U. S. Geol. and Geog. Surv., v, 1879." The name should be spelled *Lomita*, the locality being Lomita Ranch, "situated on the Rio Grande, 7 miles above Hidalgo and 65 miles from Brownsville." *Lometa* is a post-office town in Lampasas County, in the central portion of the State.





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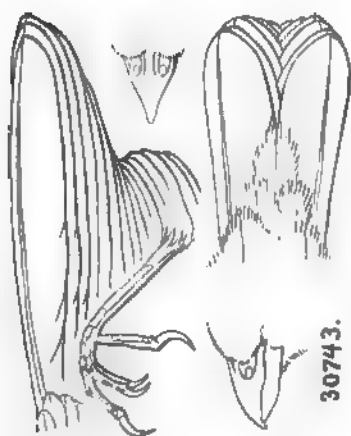
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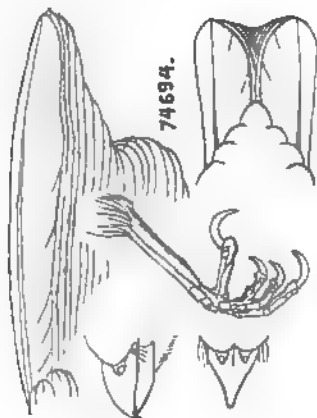


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1. *CHLOROPHONIA occipitalis*.

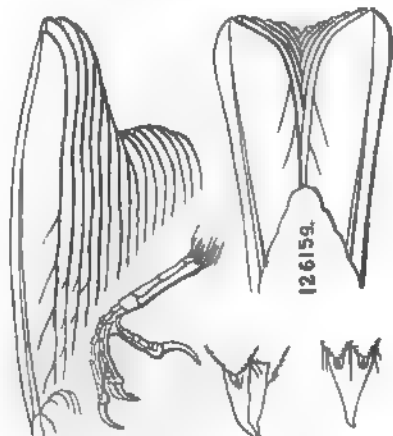


2. *EUPHONIA elegantissima*.



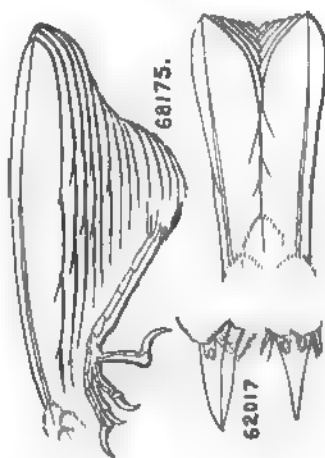
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3. *PYRRHUPHONIA jamaica*.



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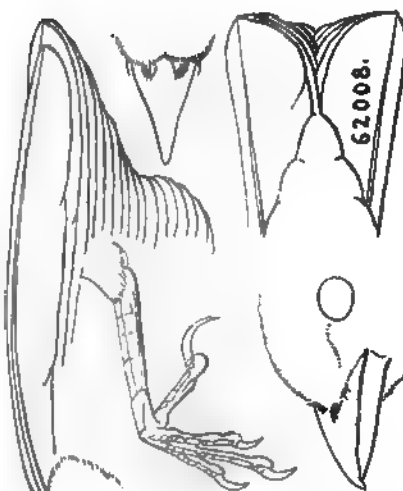
4. *CALOSPIZA larvata*.



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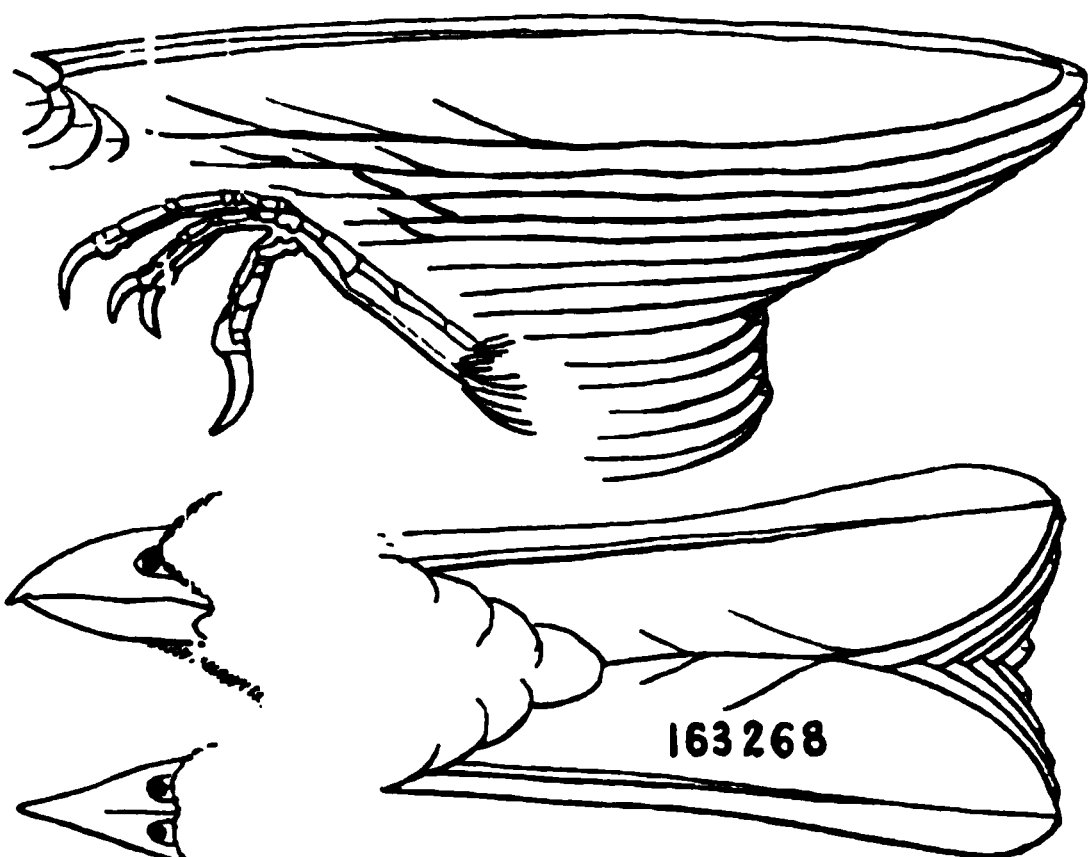
5. *HEMITHRAUPIS chrysomelas*.



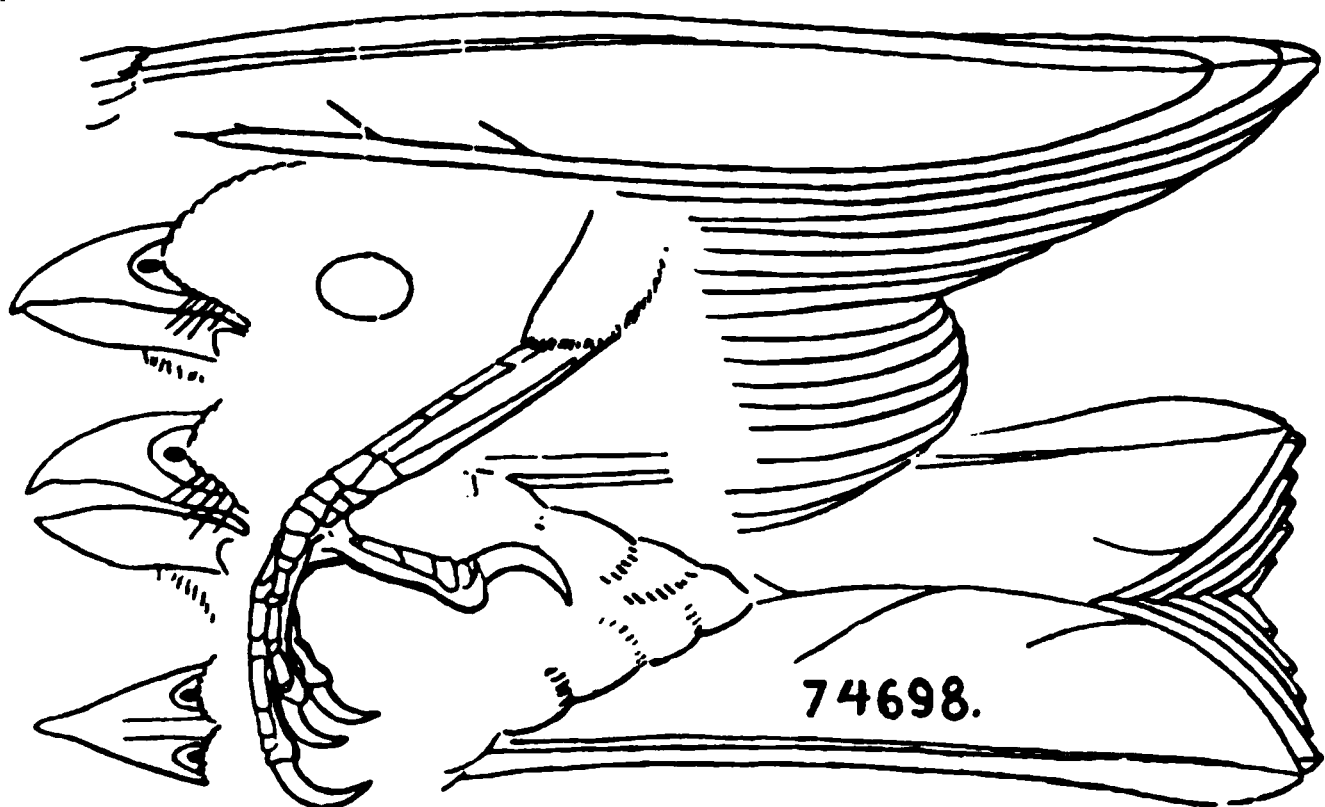
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6. *BUTHRAUPIS areol*.

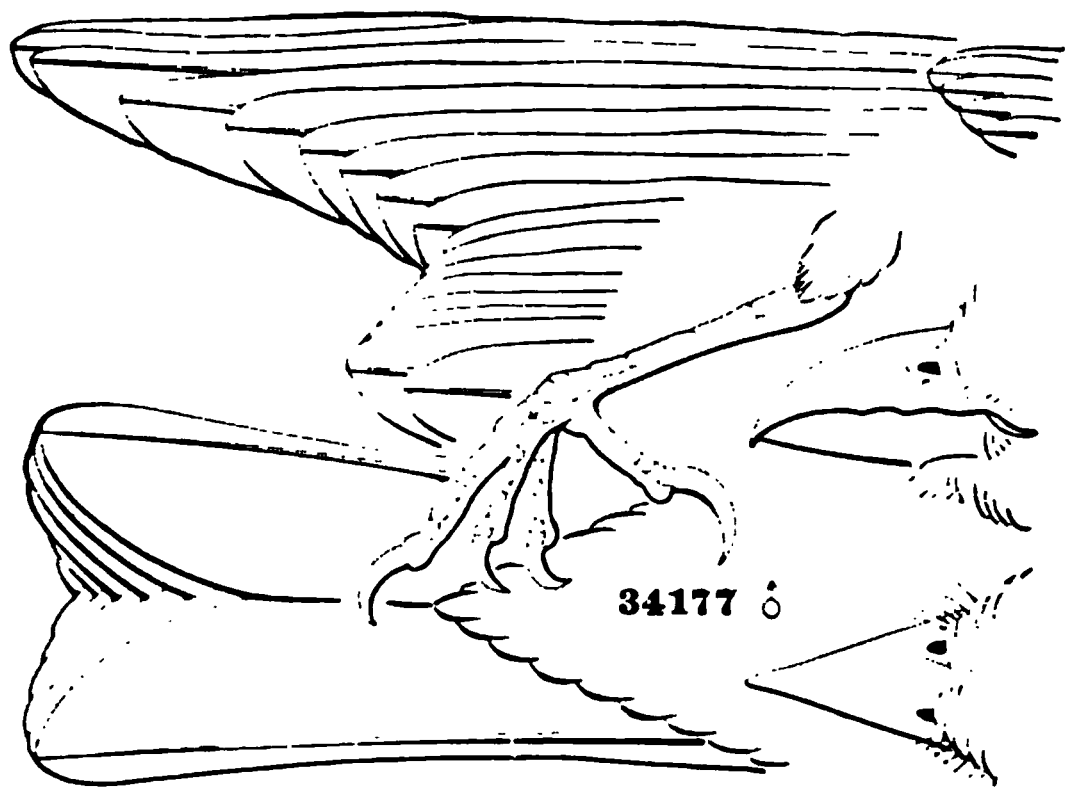




1. TANAGRA cans.

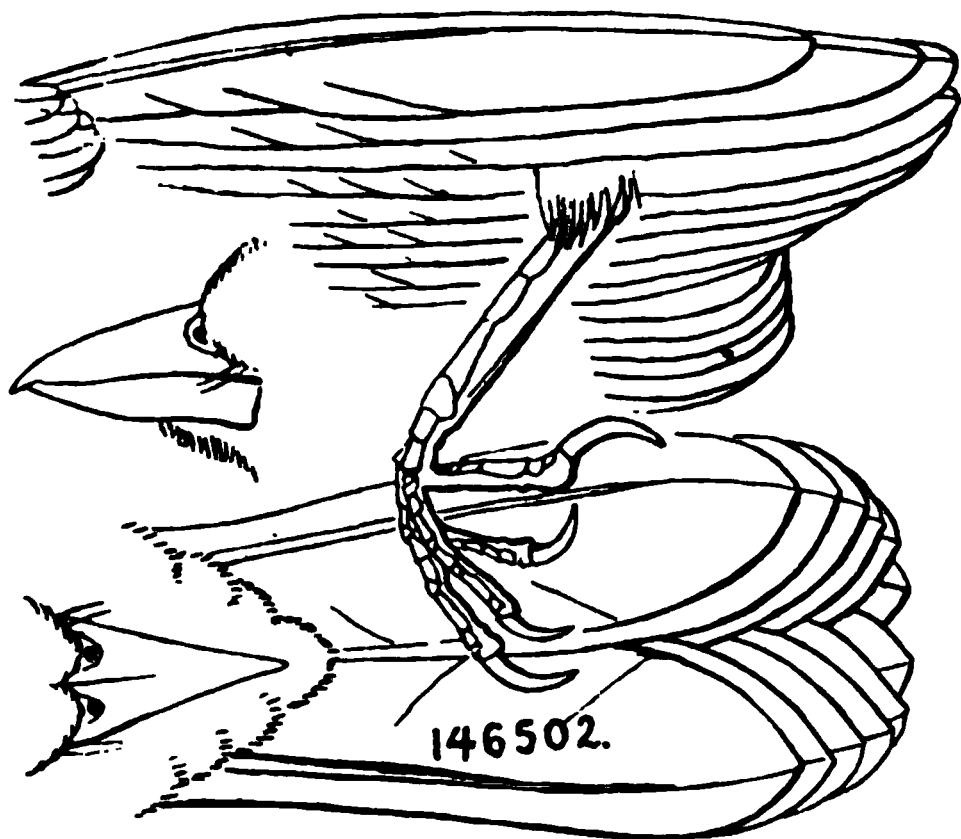


2. SPINDALIS nigricephala.

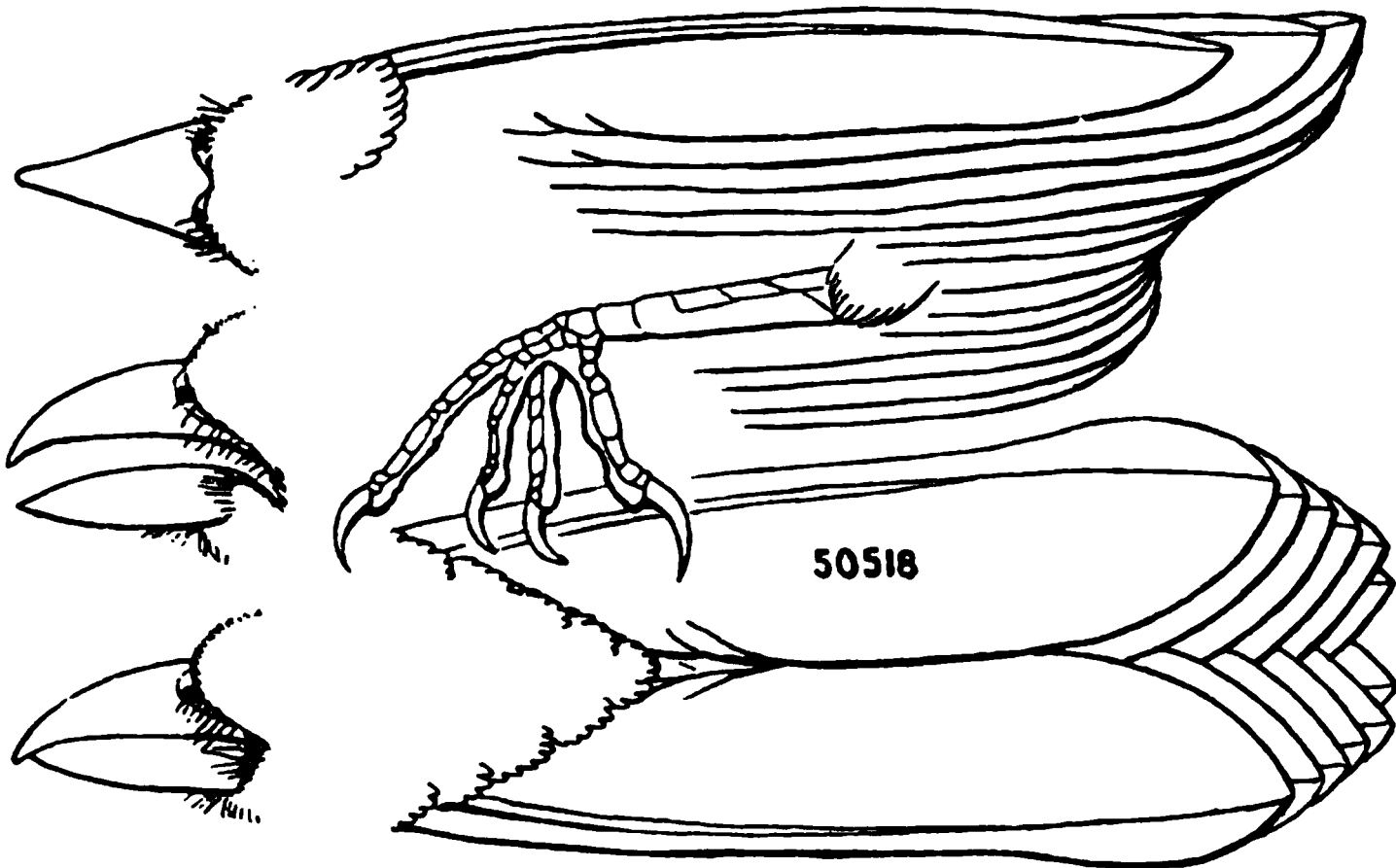


3. PIRANGA erythromelas.

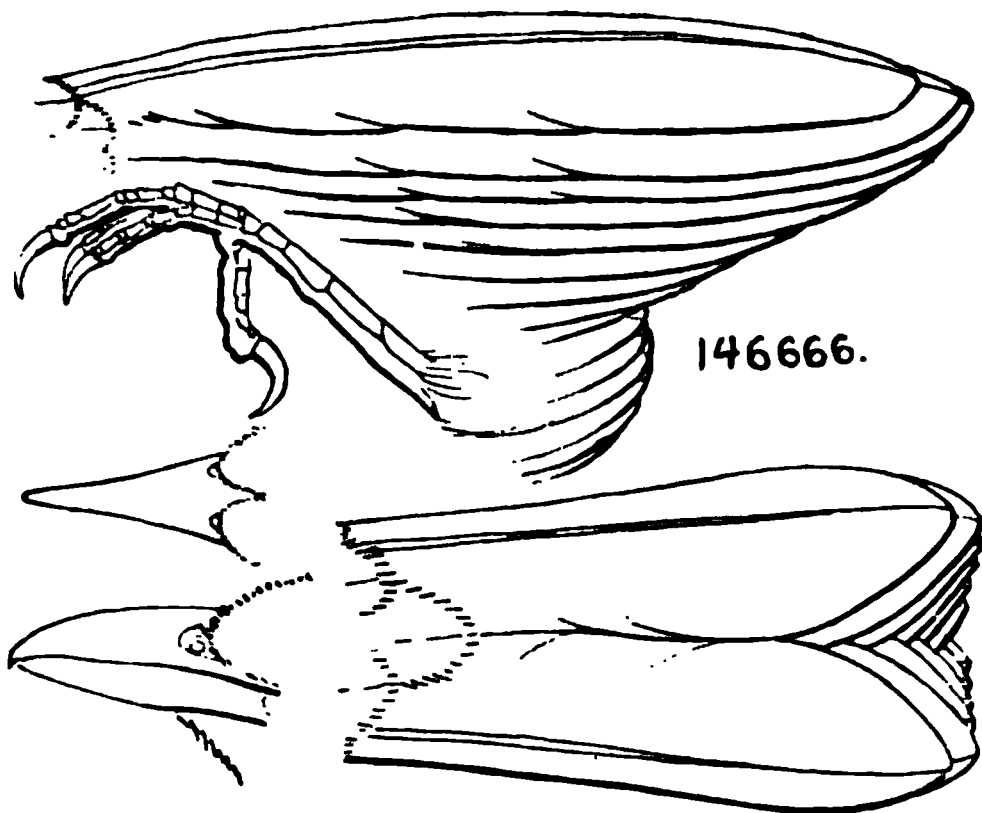




1. **RAMPHOCELUS** *passerinii*.

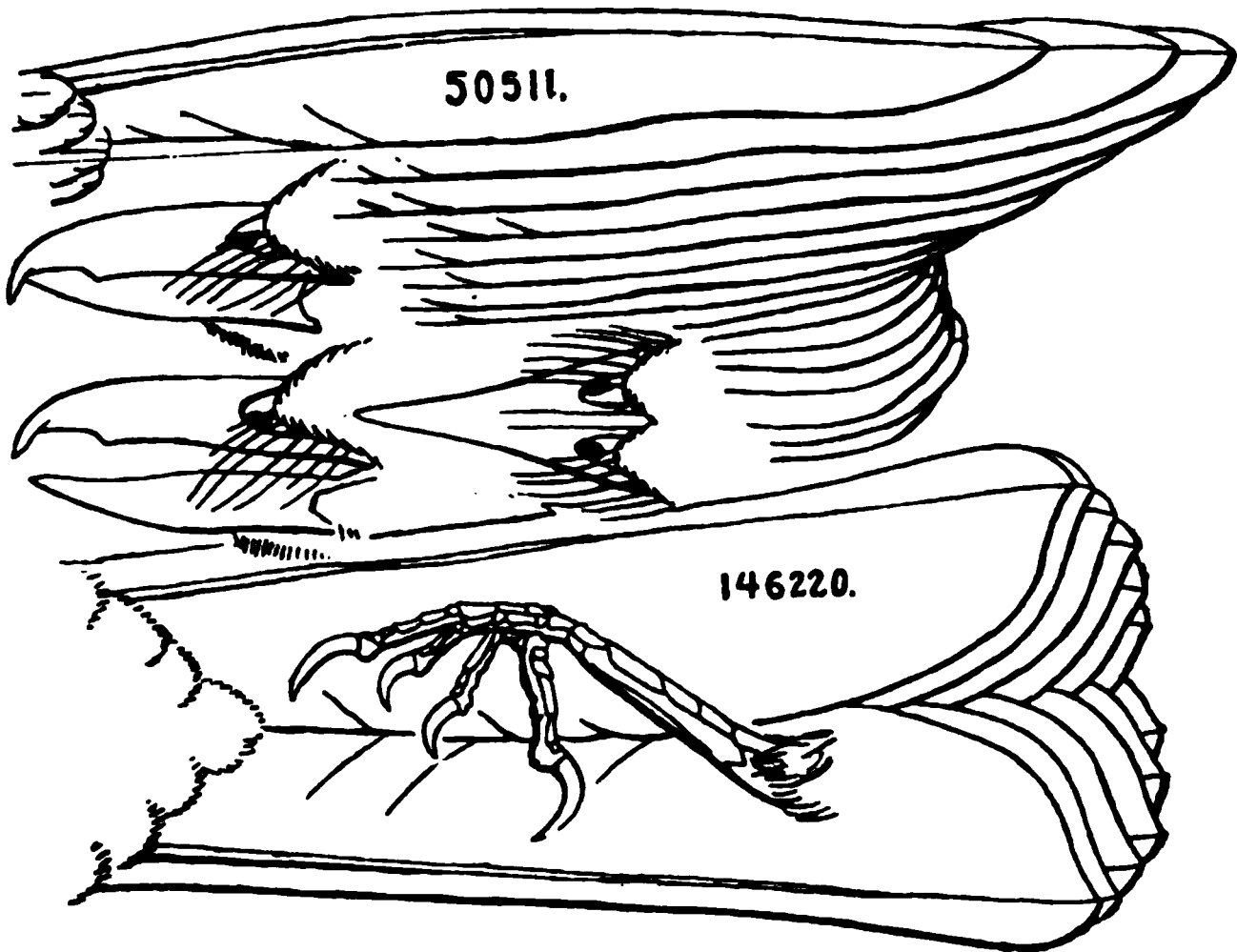


2. **PHLOGOTHRAUPIS** *sanguinolenta*.

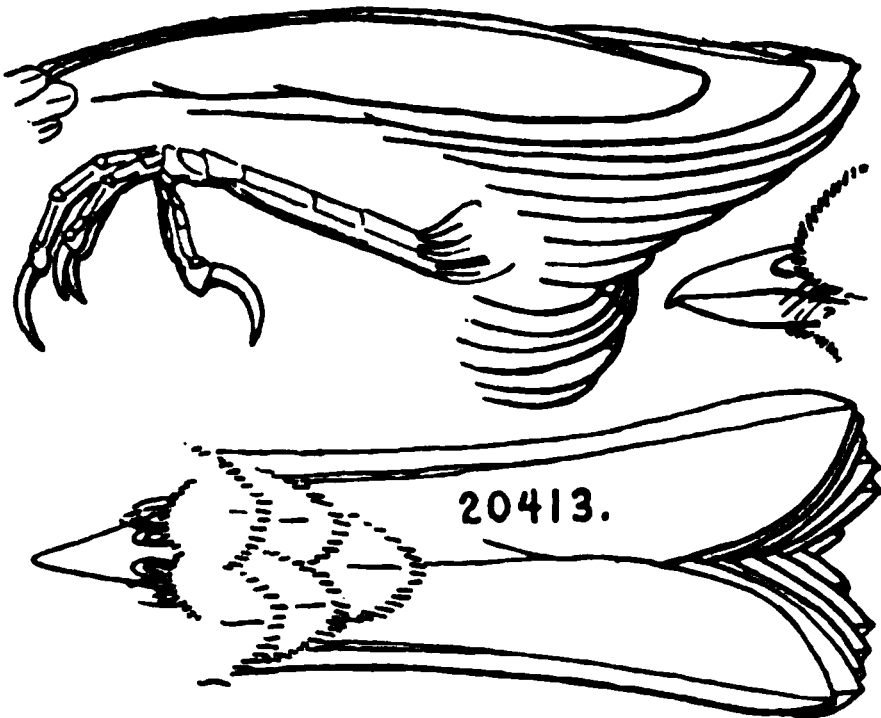


3. **HETEROSPINGUS** *rubrifrons*.

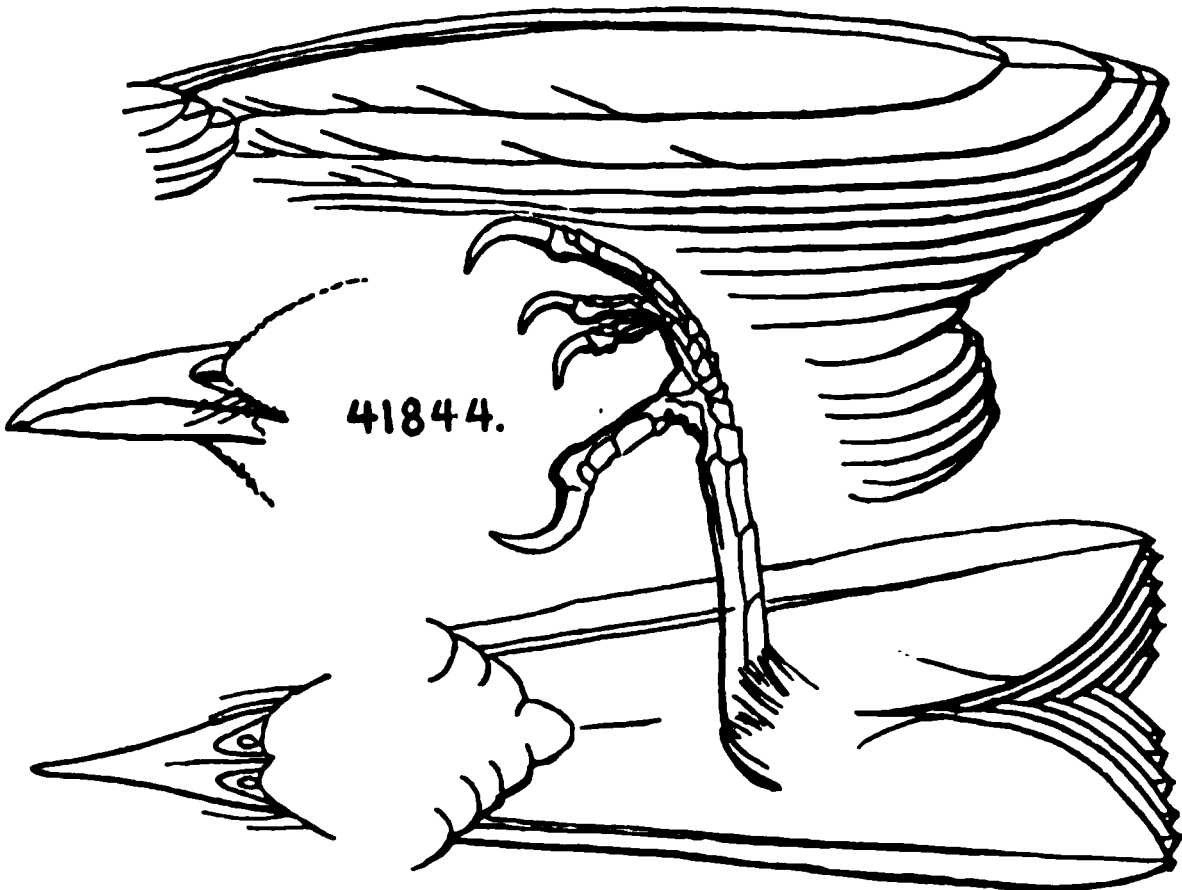




1. LANIO aurantius.



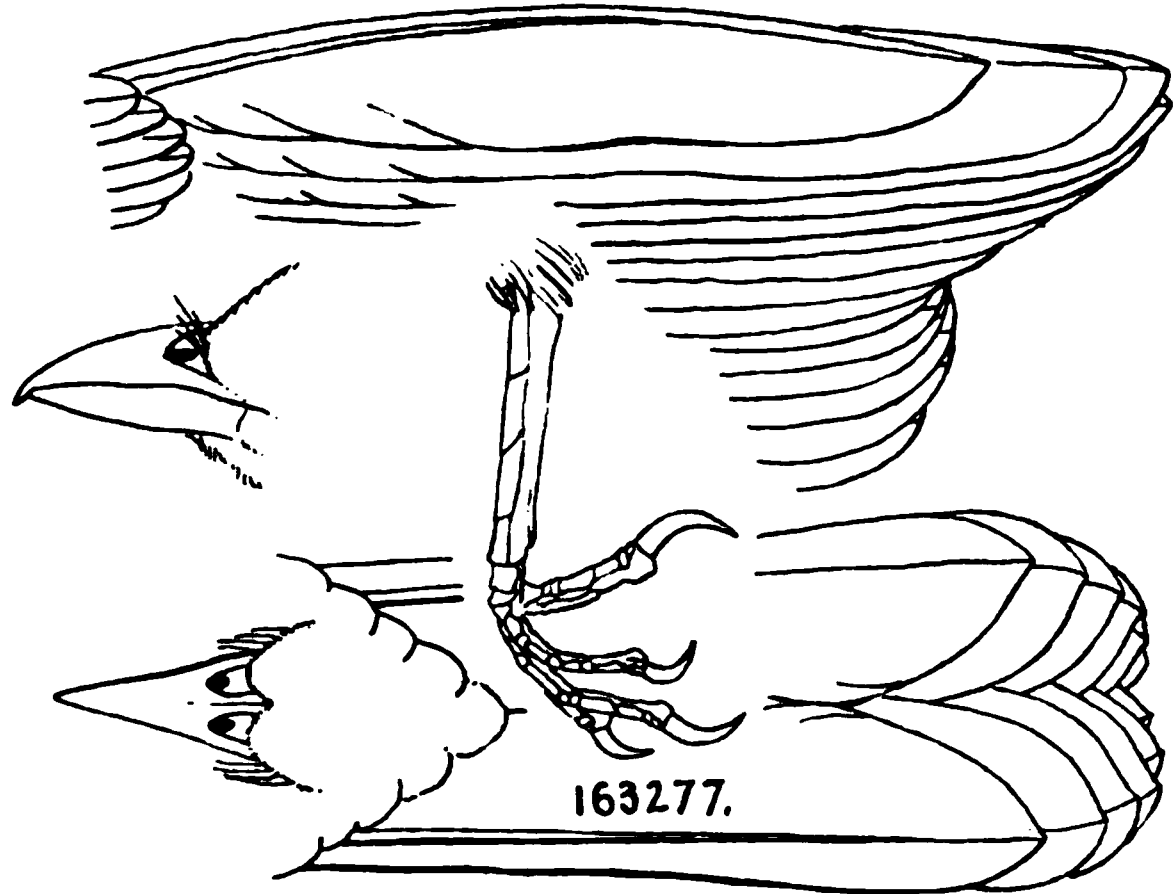
2. CHLOROSPINGUS olivaceus.



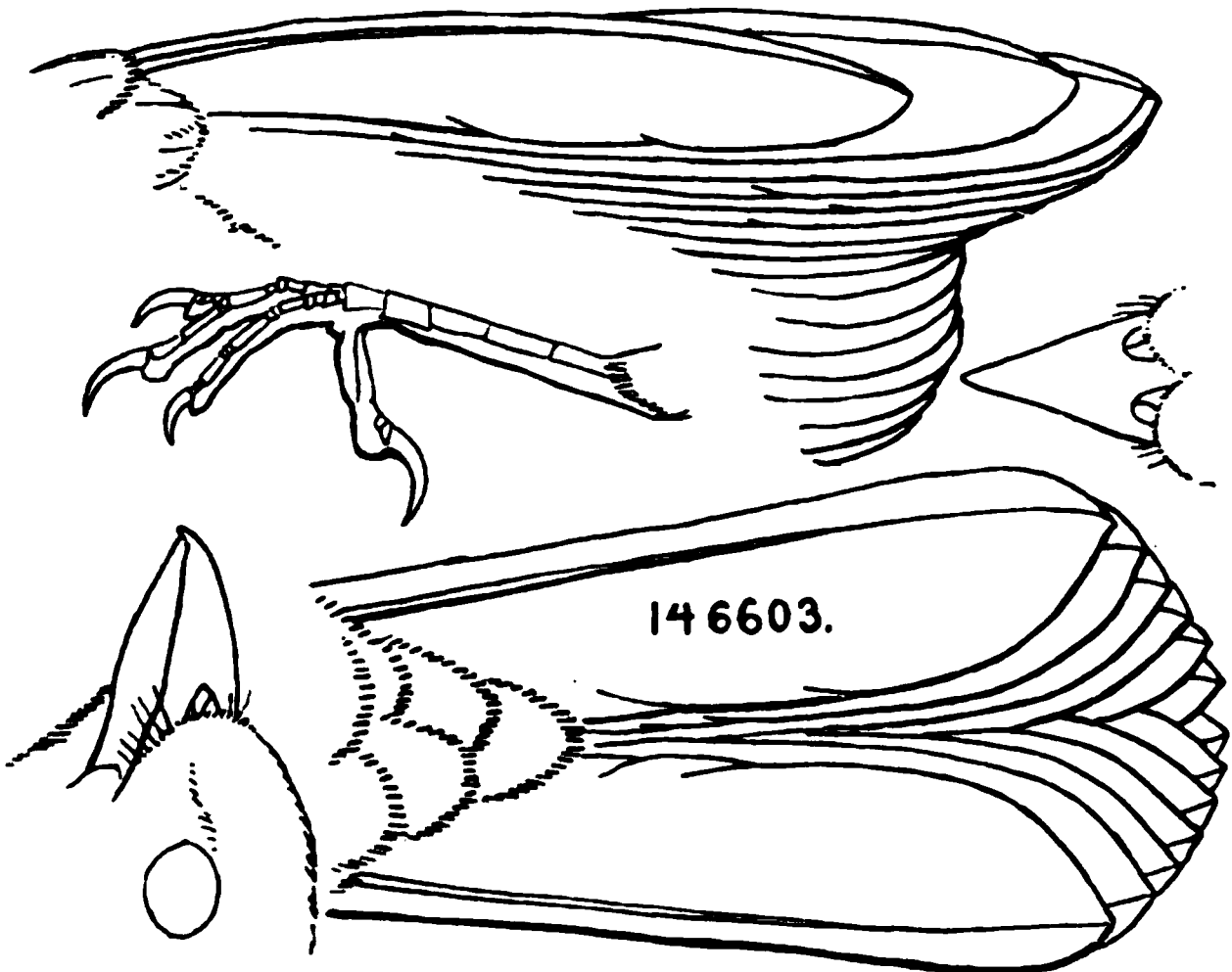
3. PHÆNICOPHILUS palmarum.



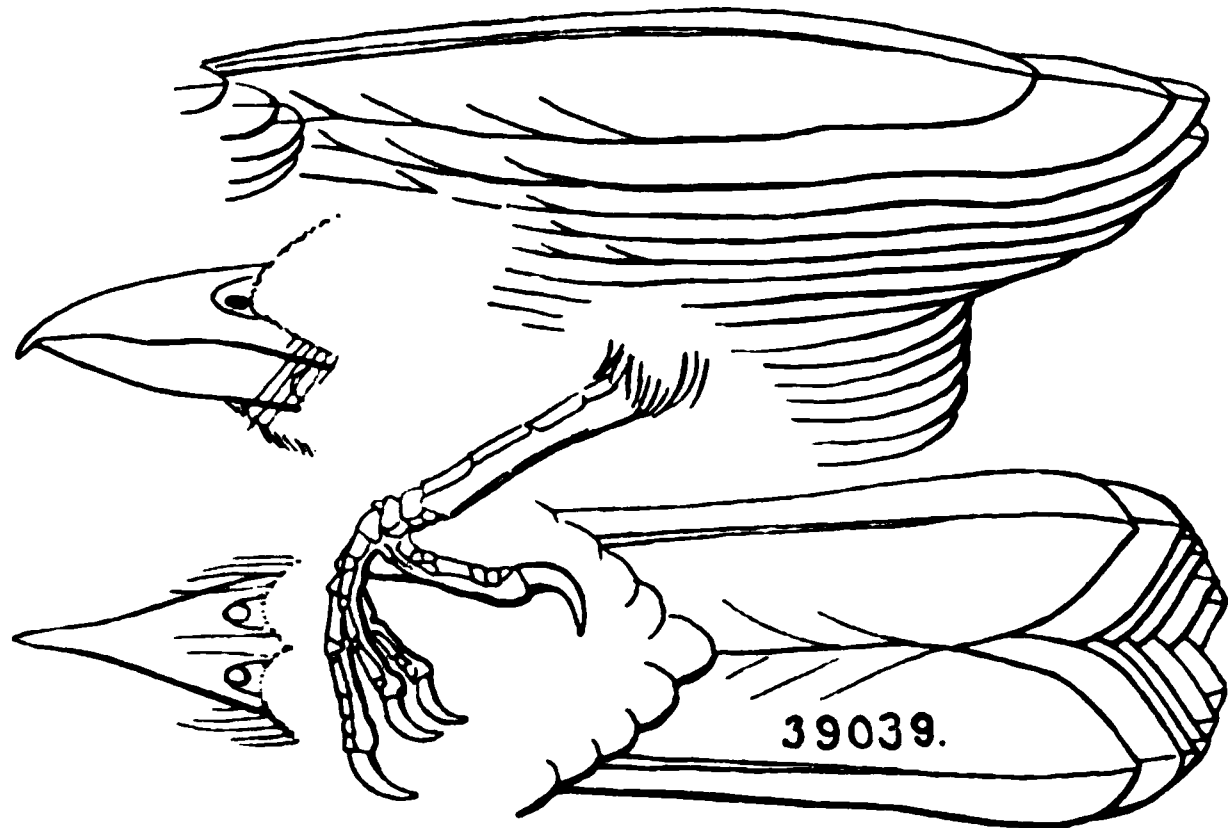




1. *EUCOMETIS cristata*.

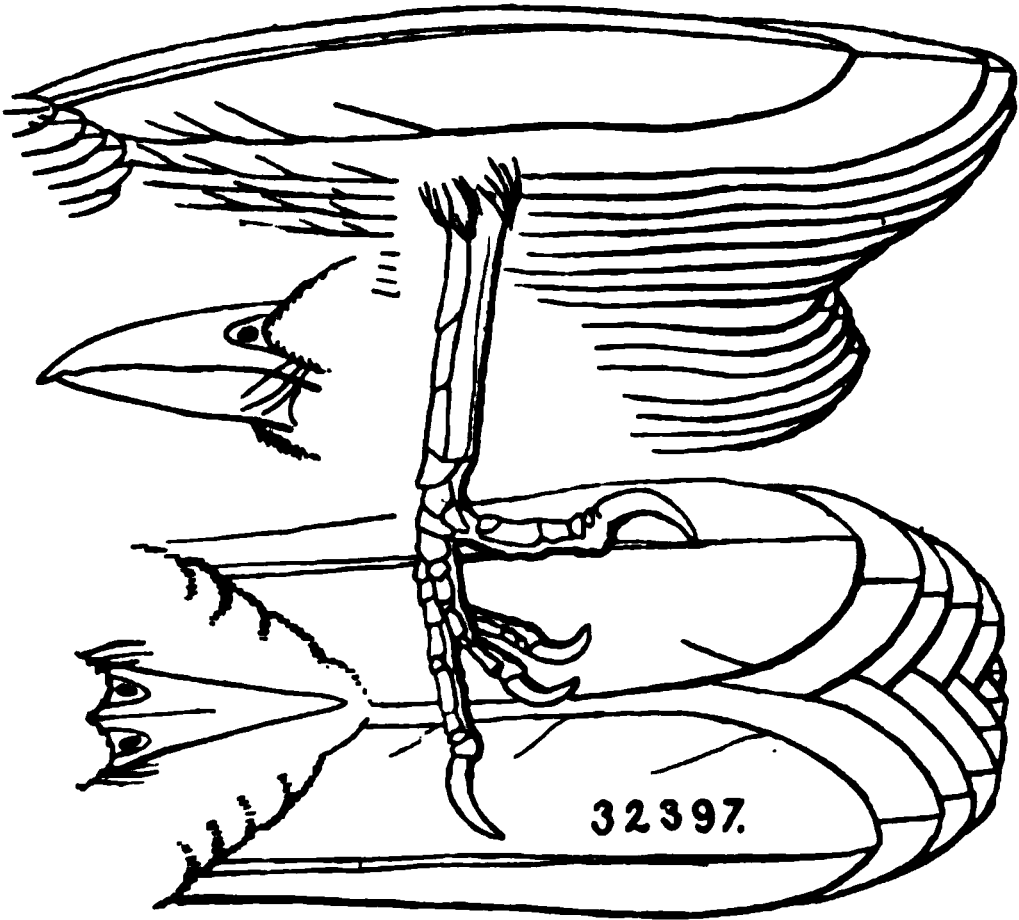


2. *PHÆNICOTHTRAUPIS rubicoides*.

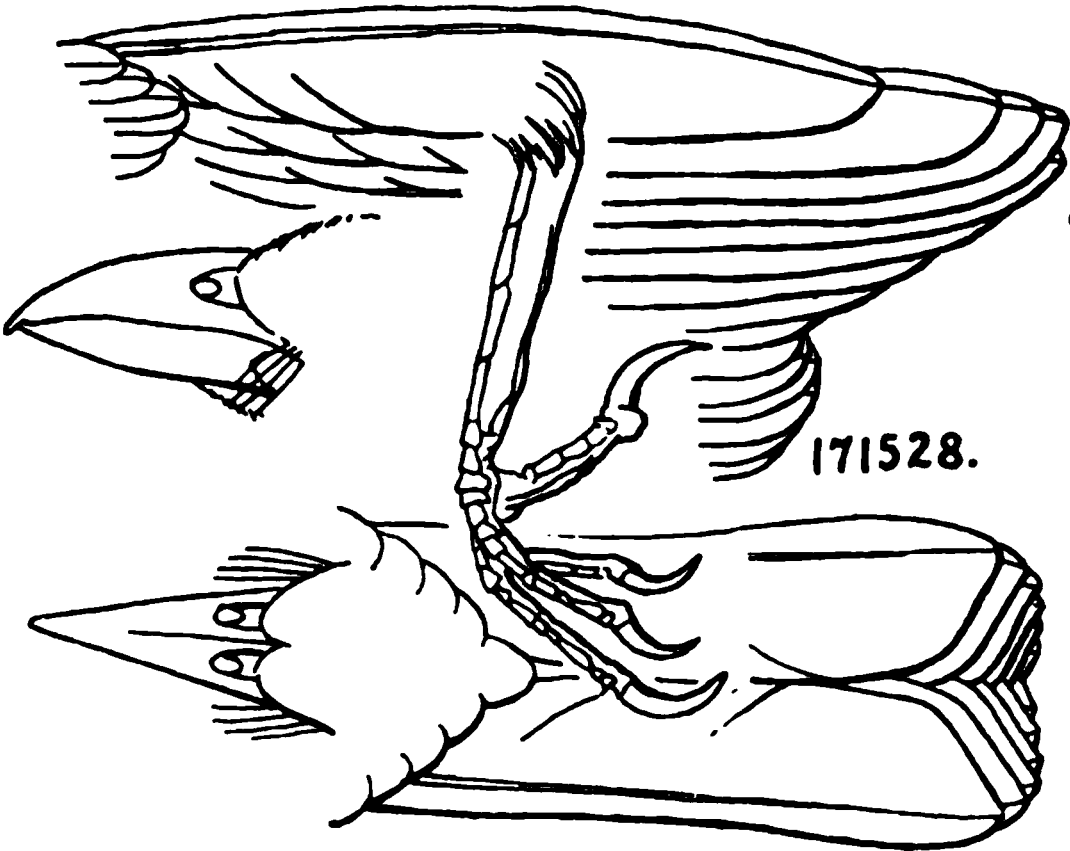


3. *CHLOROTHTRAUPIS carmioli*.

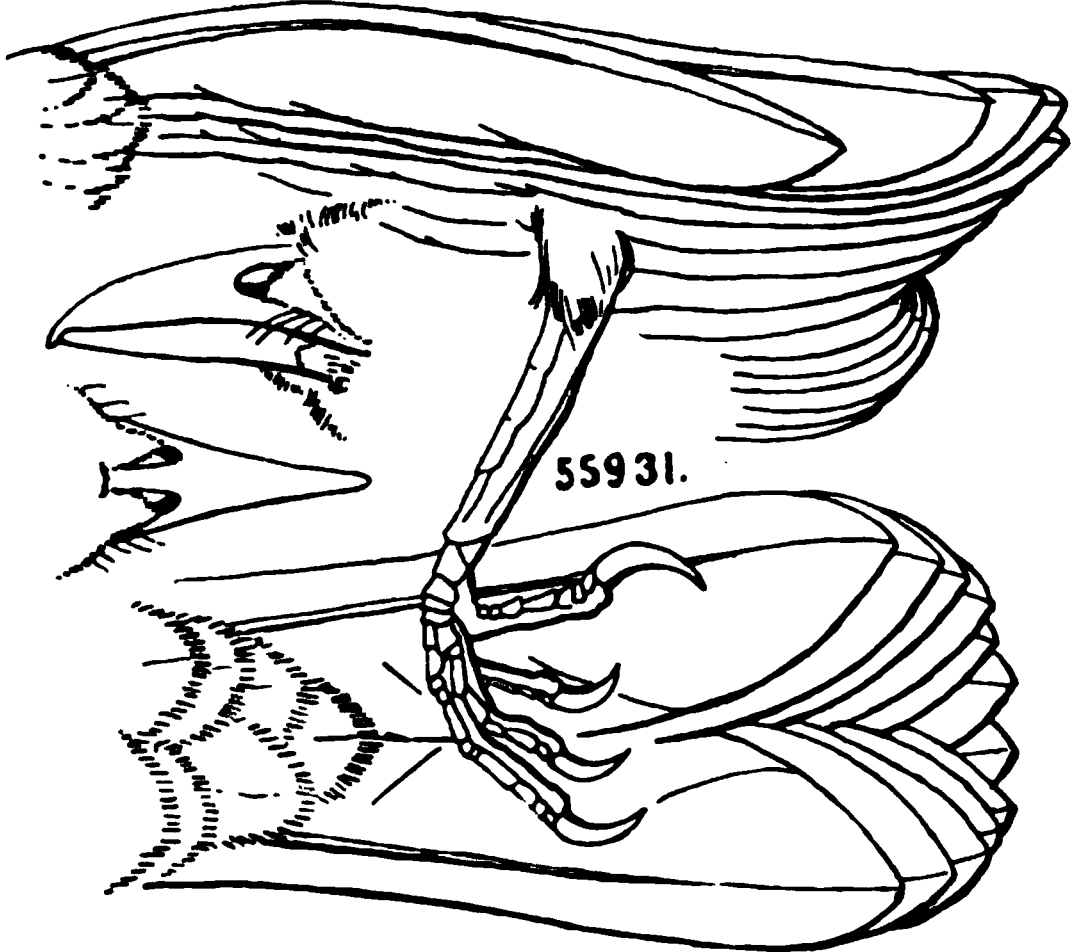




1. TACHYPHONUS rufus.

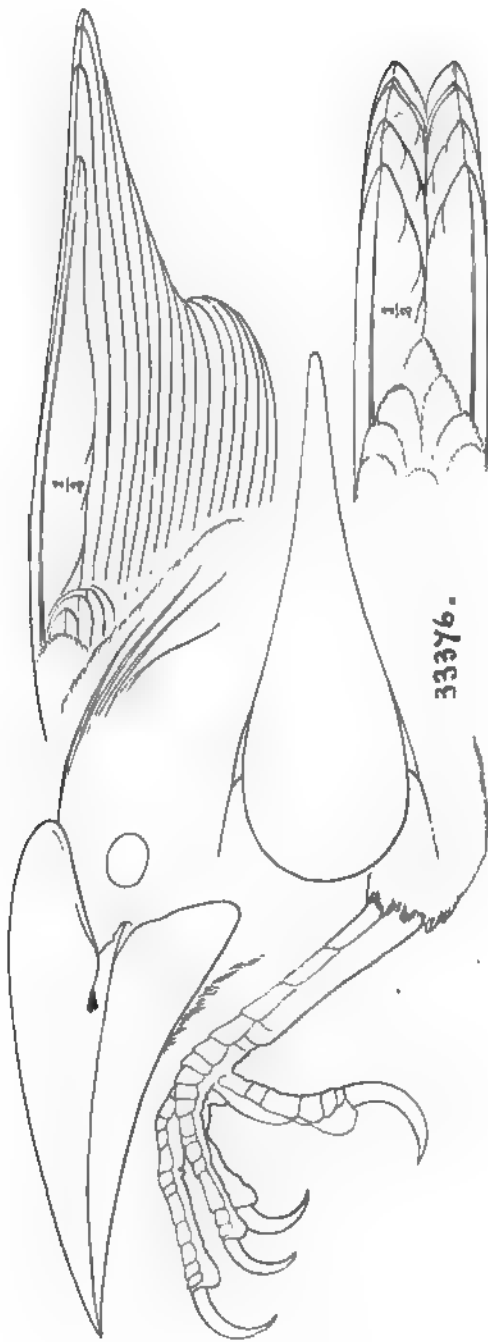


2. NESOSPINGUS speculiferus.



3. MITROSPINGUS cassini.

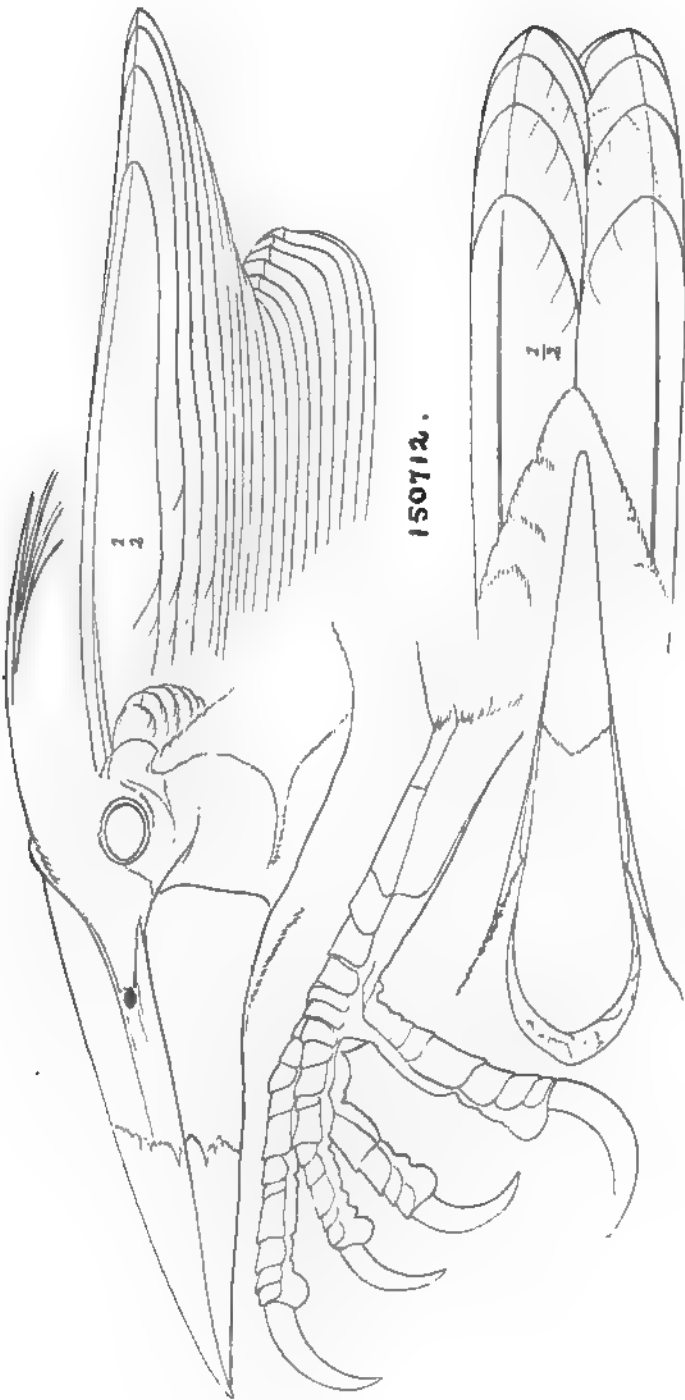




33376.

ZARYNYCHUS wegleri.

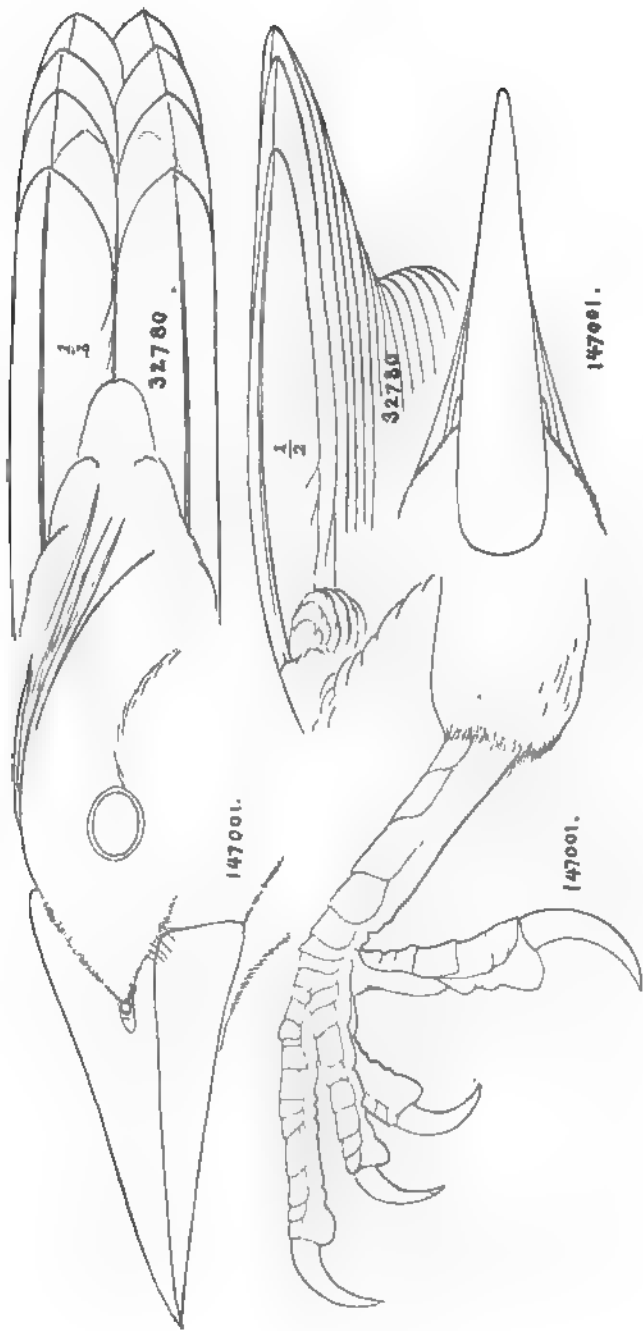




*GYMNOSTINOPS mortezuma.*

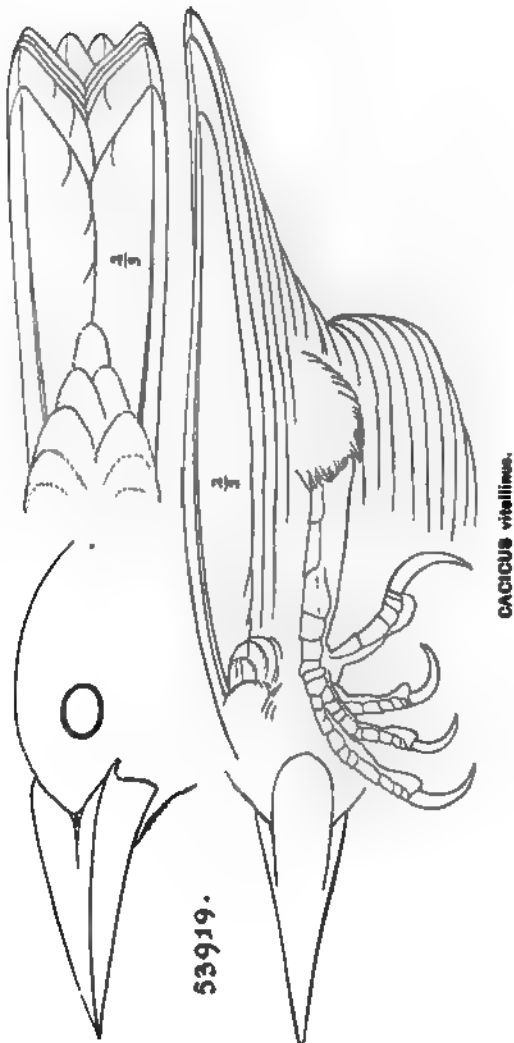




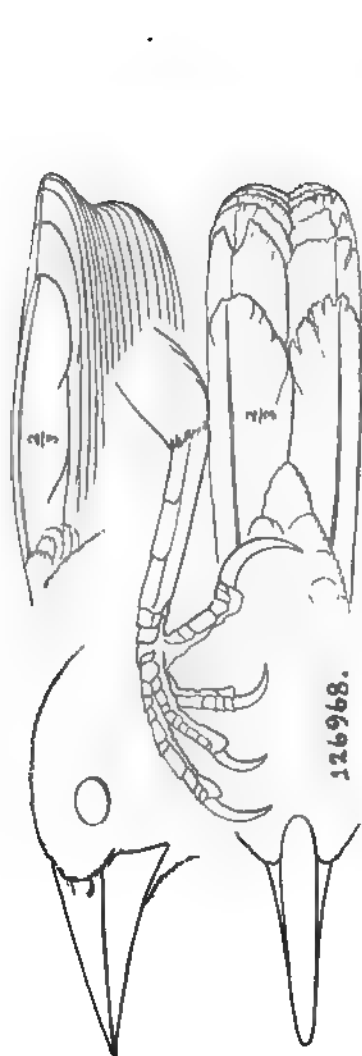


*OSTINOPS decumanus.*







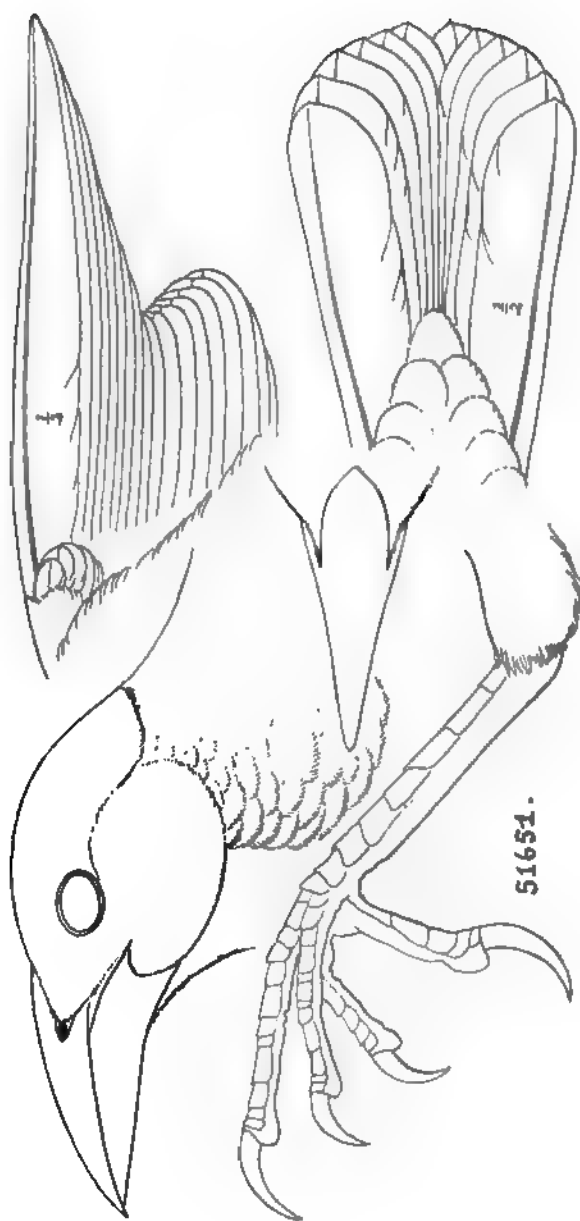


1. *AMBLYCERCUS holosericeus*.



2. *CASSICULUS melanostris*.



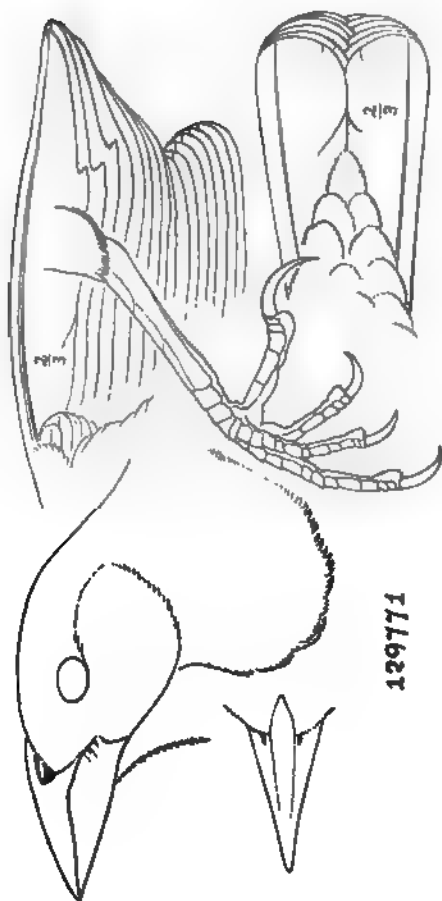


51651.

CASSIDIX oryzivora.







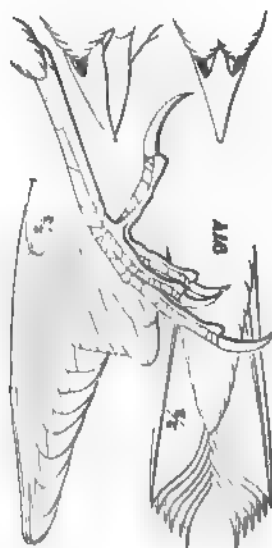
129771

1. CALLOTHRUX robustus.



32448

2. MOLOTHRUS ater.

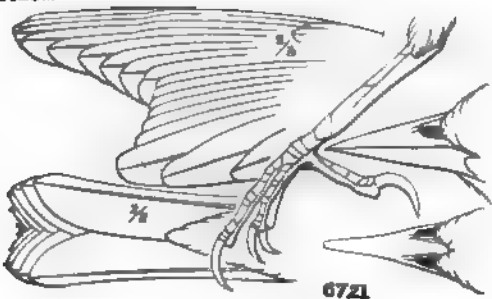


3. DOLICHONYX erythrorhynchos.

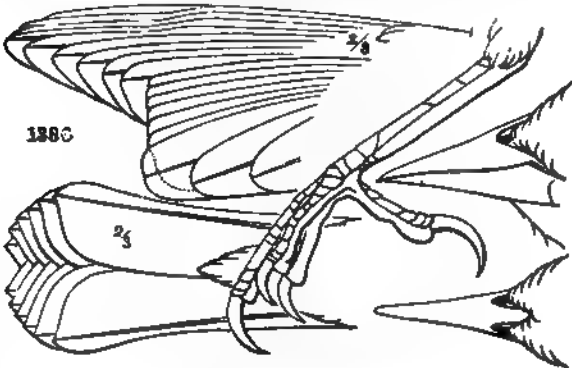


4. SCOLECOPHAGUS carolinus.

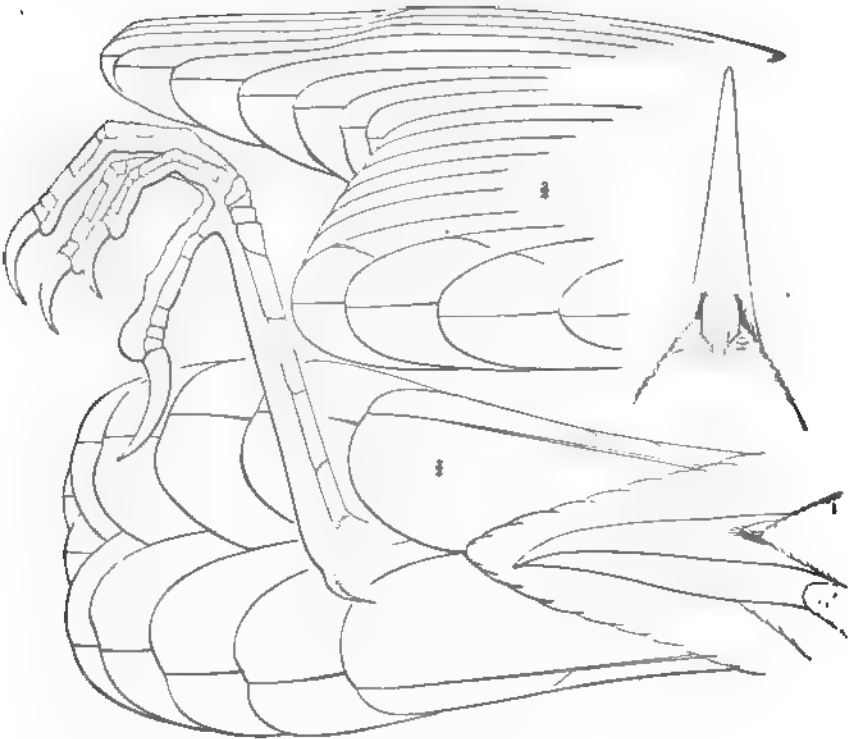




1. *ICTERUS galbula*

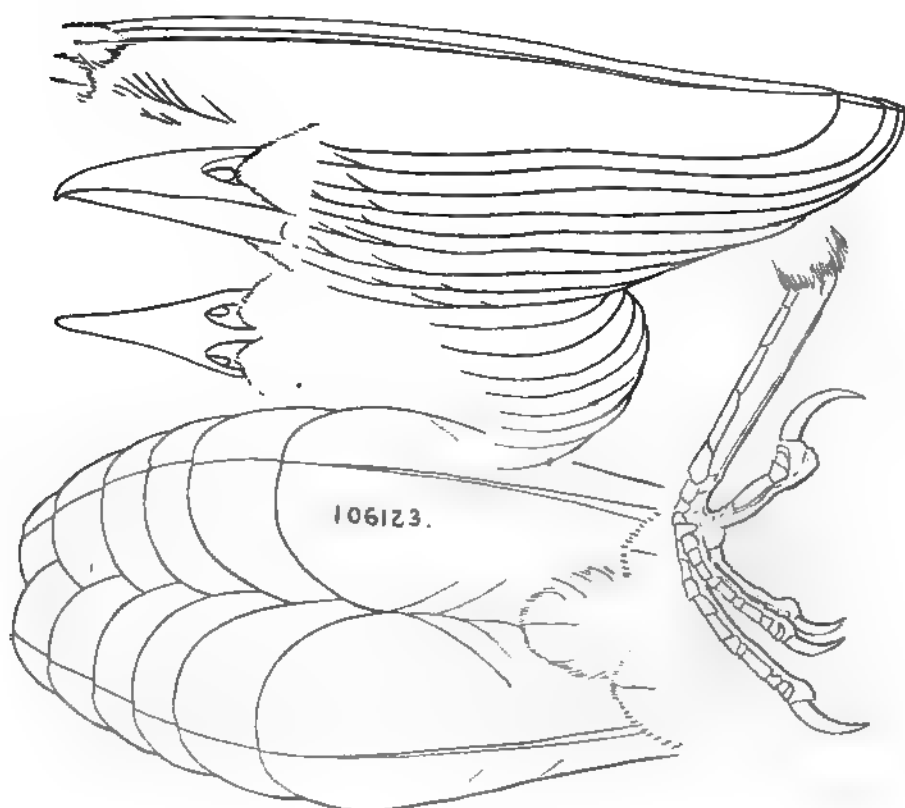


2. *AGELAIUS phoeniceus*.

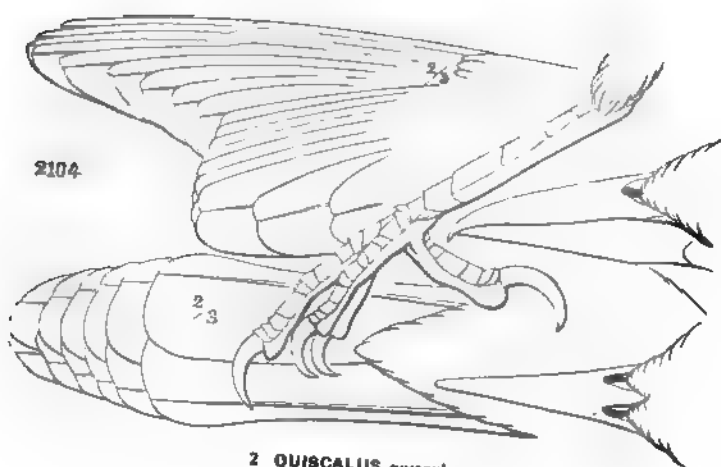


3. *MEGAQUISCALUS major*.



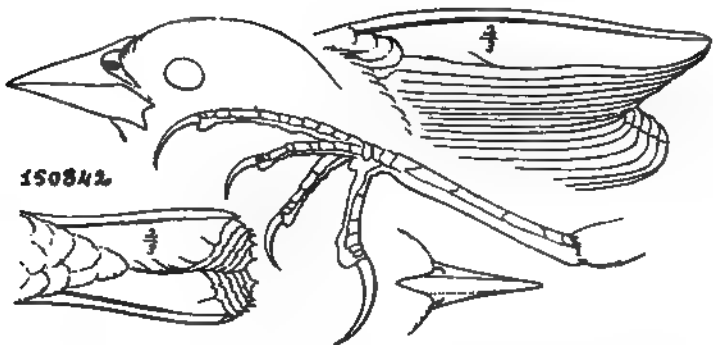


1. HOLOQUISCALUS jamaicensis.



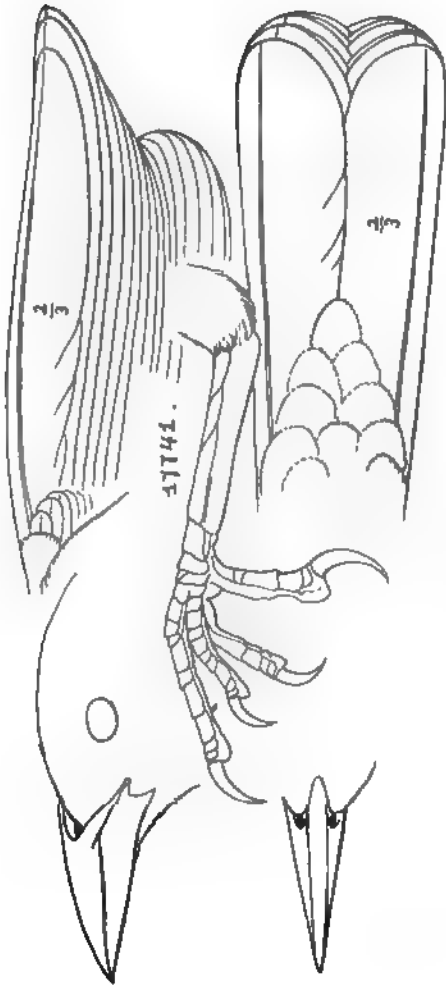
2. QUISCALUS quiscula.





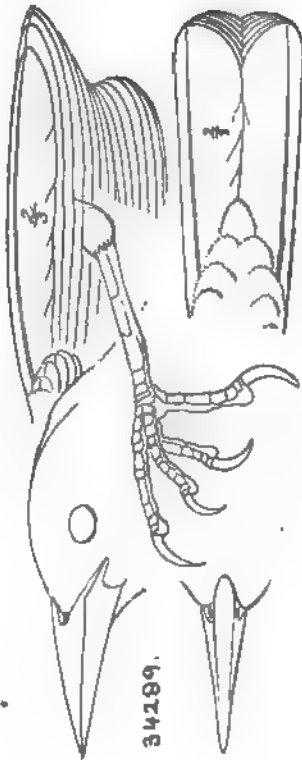
150842

1. *LEISTES militaris*.



47741.

2. *PTILOXENA streptolaea*.

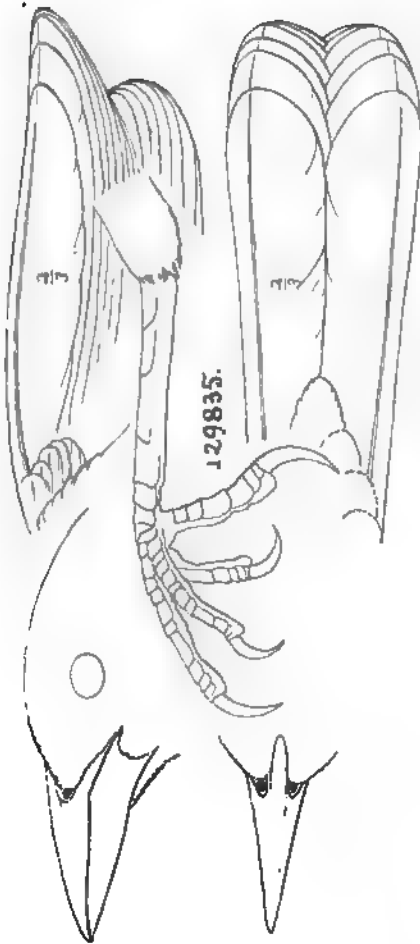


34189.

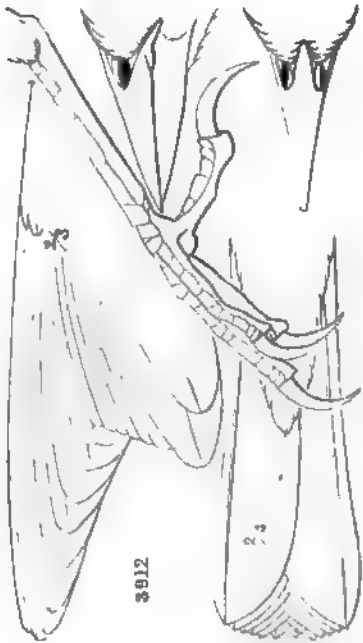
3. *NESOPODAR nigerrimus*.



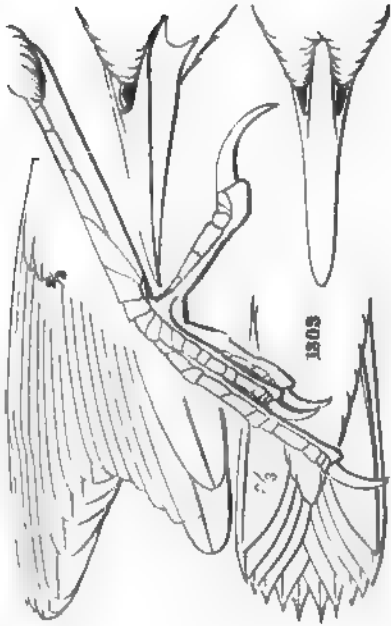




1. *DIVES dives*.

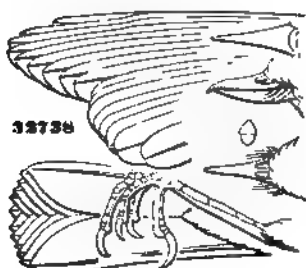


2. *XANTHOCEPHALUS xanthocephalus*.

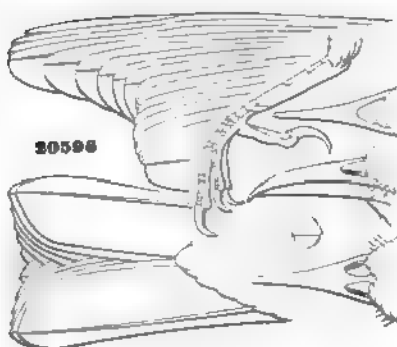


3. *STURNELLA magna*.

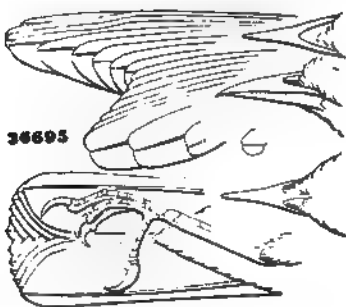




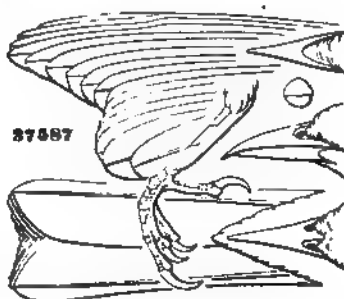
1. *DIGLOSSA baritula*.



2. *CHLOROPHANES spiza*.



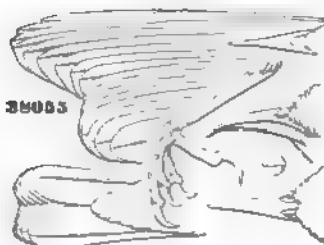
3. *DACNIS cayana*.



4. *GLOSSIPTILA ruficollis*.



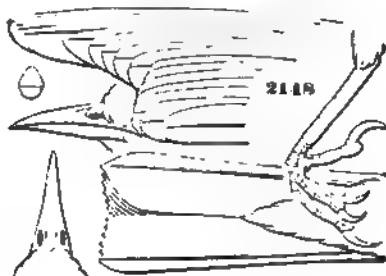
5. *CYANERPES cyaneus*.



6. *COERBA flaveola*.



7. *MNIOTILTA varia*.



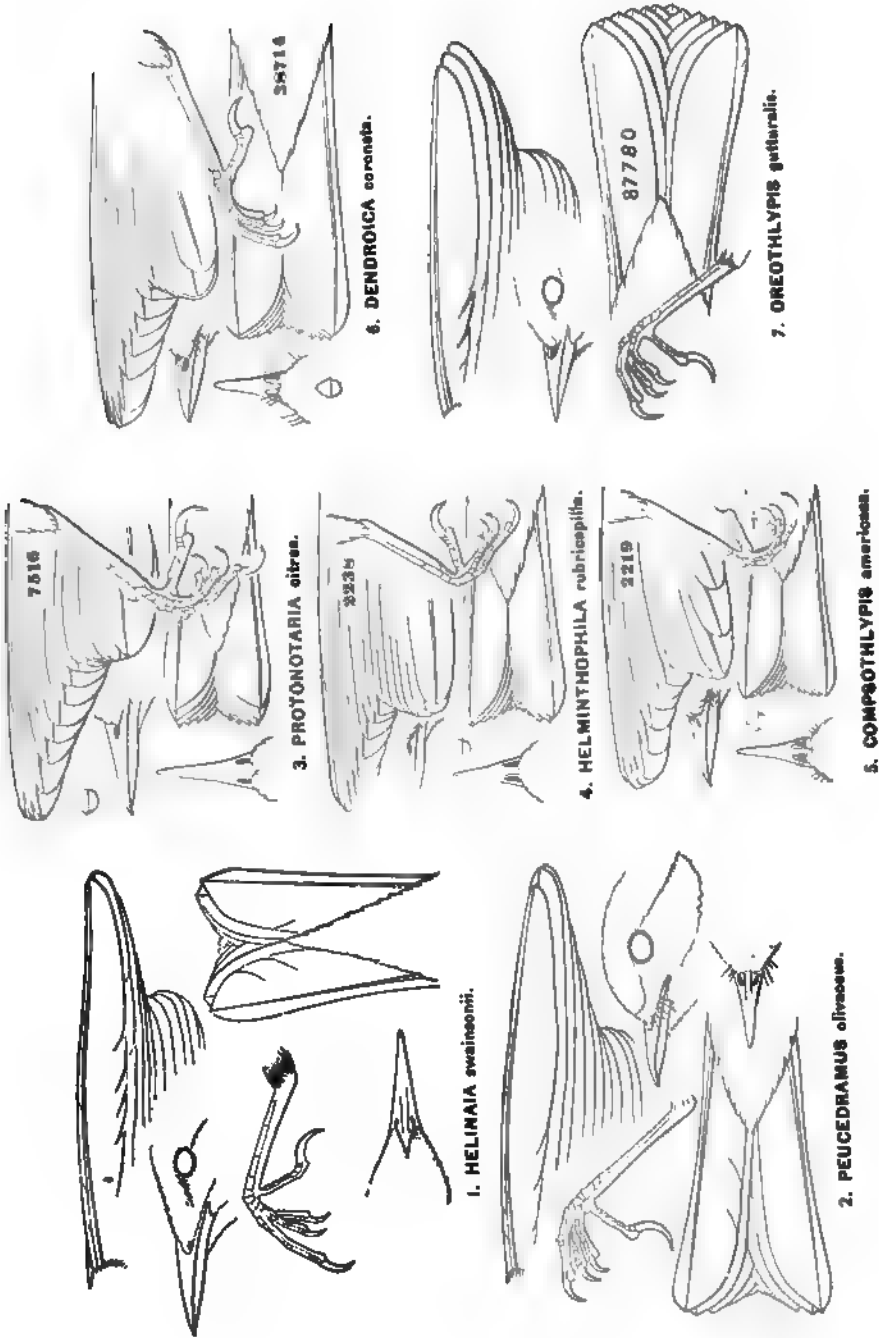
8. *HELMITHEROS vermivorus*.

1.

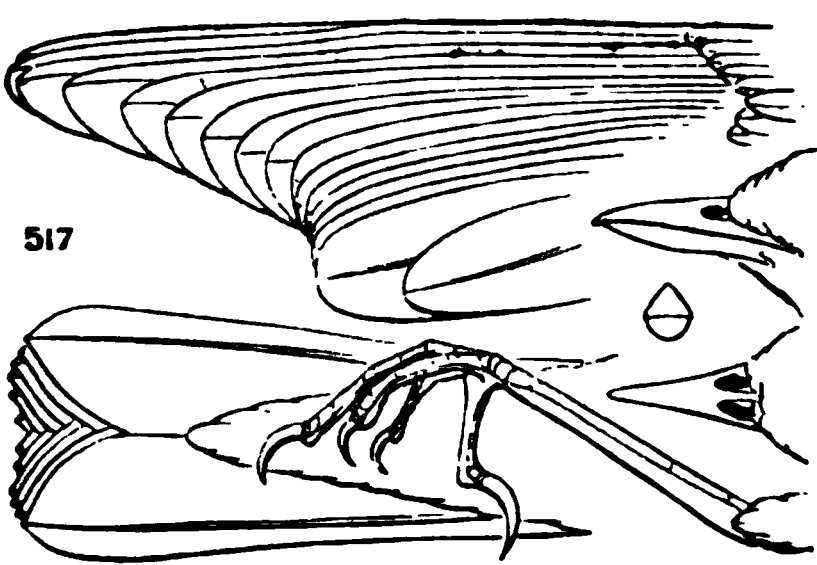
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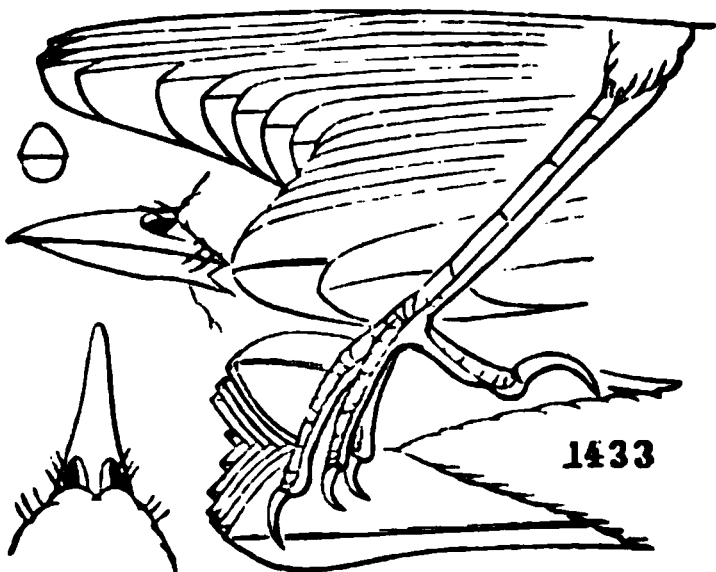
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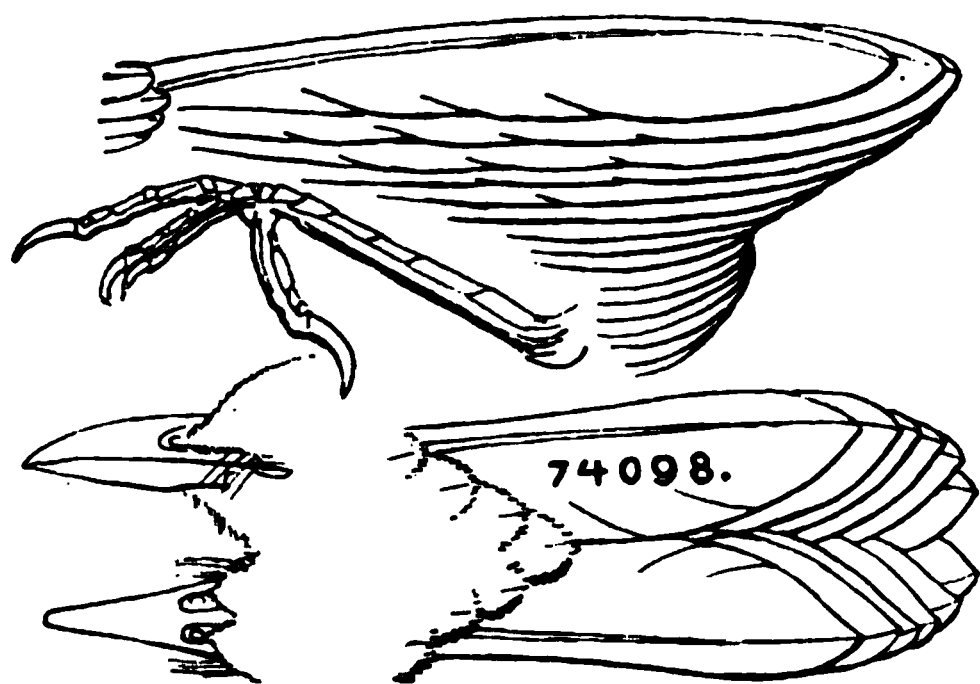




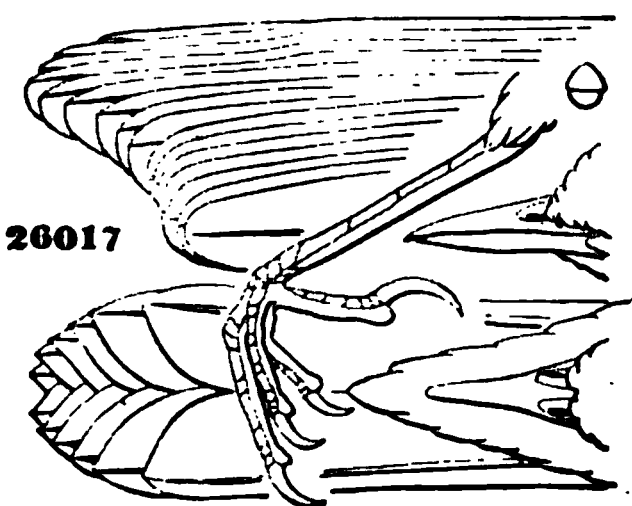
1. OPORORNIS formosa.



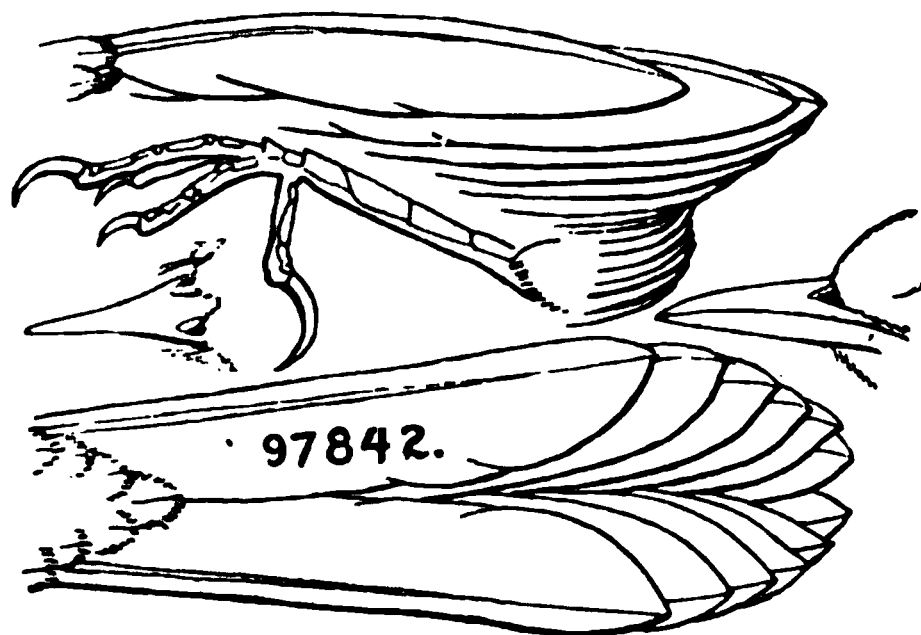
2. SEIURUS aurocapillus.



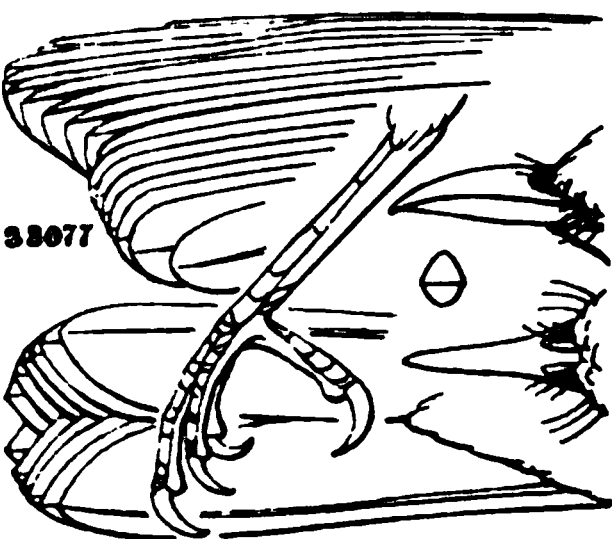
3. CATHAROPEZA bishopi.



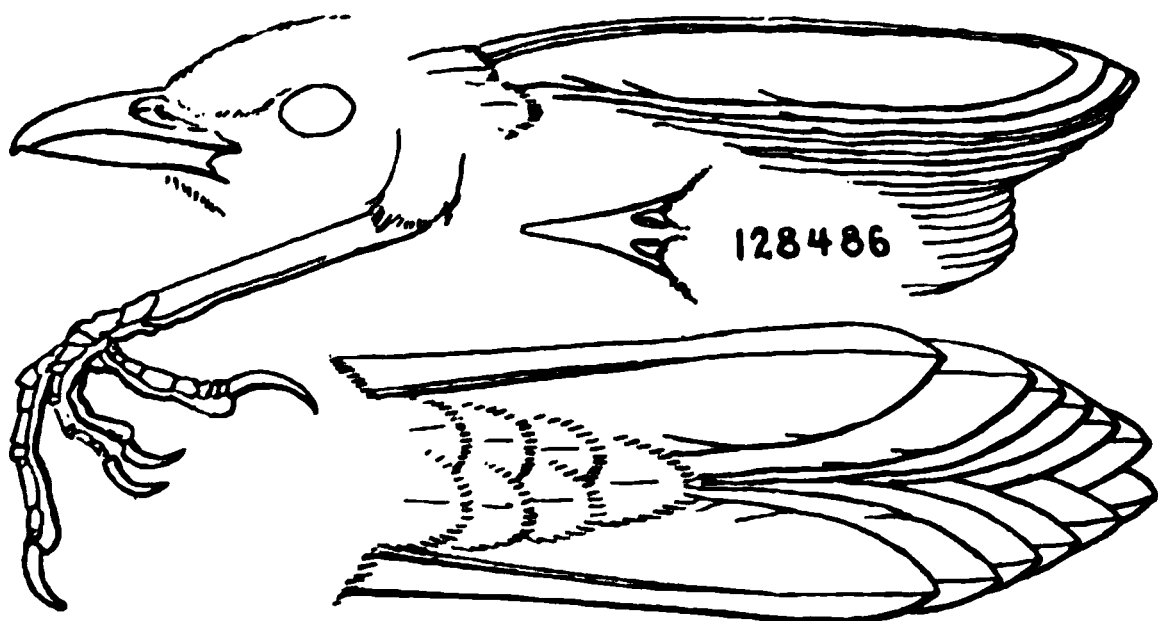
4. GEOTHTYPIS trichas.



5. MICROLIGEIA palustris.



6. TERETISTRIS fernandinae.



7. CHAMÆTHLYPIS poliocephala.

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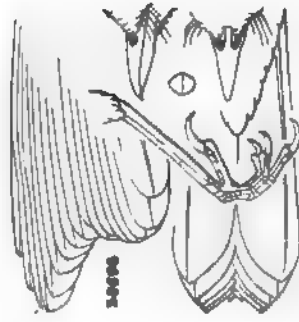
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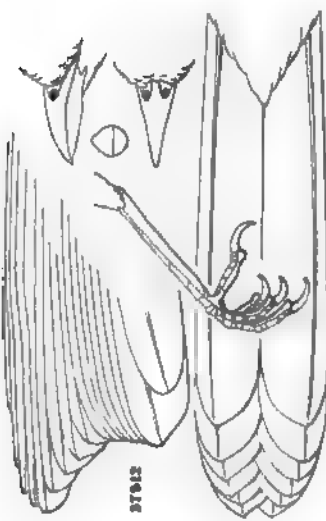




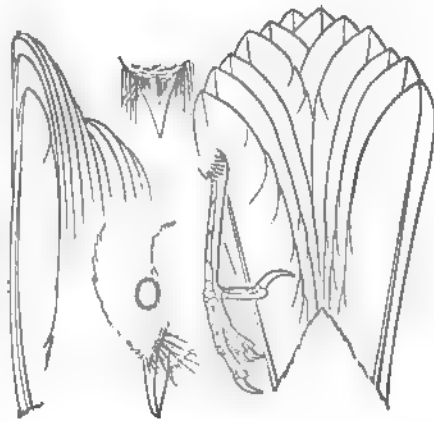
3. *SETOPHAGA ruticilla*.



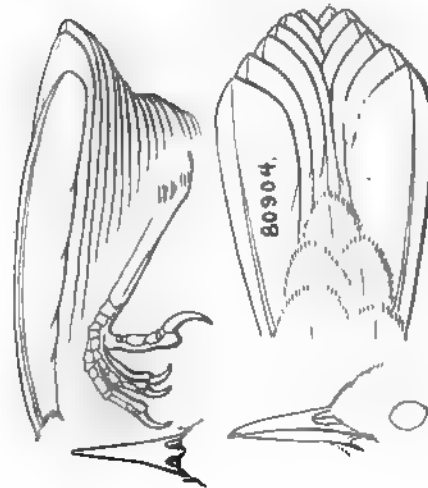
8. *BASILEUTERUS culicivorus*.



3. *GRANATELLUS fenestratus*.



4. *MYIOBORUS miniatus*.

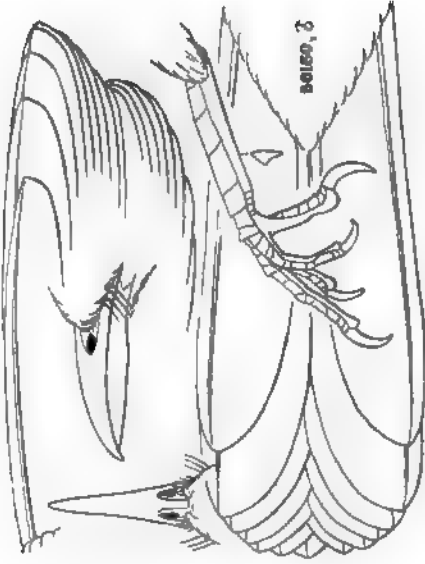


1. *LEUCOPEZA semperi*.



2. *ICTERIA virens*.

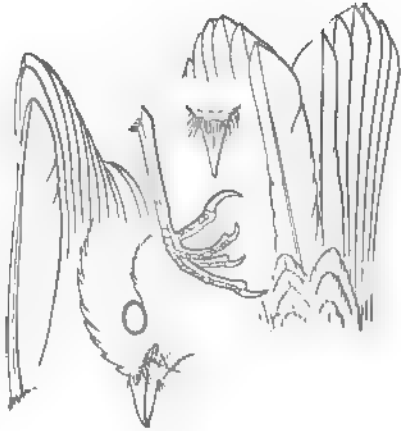




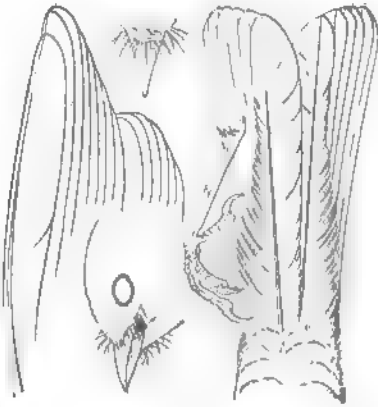
1. *WILSONIA mitrata*.



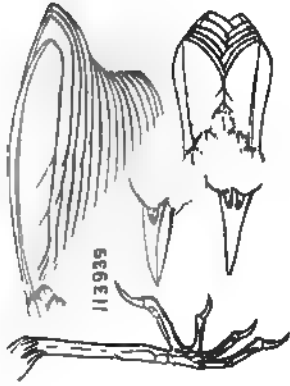
3. *EUTHLYPIS lechrymosa*.



4. *ERGATICUS ruber*.



2. *CARDELLINA rubrifrons*.



6. *CERTHIDEA olivacea*.

5. *RHODINOCICHLA reesei*.





















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